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ELEMENTS

OF

THERAPEUTICS:

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OR,

FIRST PRINCIPLES

OF THE

PRACTICE OF PHYSIC.

By ANDREW DUNCAN, M. D.

Fellow of the Royal College of Physicians, Edinburgh.

Εγω δε τι βελομαι; καταμαθειν την Φυσιν, και ταυτη ἑπεσθαι. Epictet.

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Omnem quasi cognitionem medici colligit, et ad ultimum artis salutaris finem ducit Therapia generalis. In ea itaque explicanda, primum ostendendum est, quomodo per rationem et experientiam in praemissis disciplinis acquisita cognitio nunc ordine apto disponatur, quo utilia, et certa subtilius tantum disputatis, et minus certis præferantur.

Ludwig.

To the MEDICAL SOCIETY of STUDENTS in Edinburgh.

GENTLEMEN,

DEDICATIONS may in general be aſcribed either to gratitude for paſt, or to expectation of future ſervices. I do not pretend to ſay that I am in no degree influenced by theſe conſiderations. I am proud to affirm that I retain a deep ſenſe of the former, and I am not aſhamed to acknowledge that I live in hopes of the latter. But a reaſon different from both has principally determined me to addreſs you on the preſent occaſion.

I take this opportunity of ſoliciting, not your patronage, but your correction. I

have long witneſſed that candour and liberality of ſentiment with which you examine every attempt to improvement in the medical art. Equally ſtrenuous advocates in the defence of truth, and judicious critics in the detection of error, you are always ready to hear, and never unwilling to be convinced. To you, then, I dedicate the following ſheets, from a perſuaſion that you will afford me a fair opportunity of defending and illuſtrating my ſentiments; and that, from your obſervations, I ſhall be enabled to detect preſent, and avoid future errors.

I am, Gentlemen,

Your fellow Member,

EDIN. 25. Oct. 1772. } And humble ſervant,

The AUTHOR.

PREFACE.

An acquaintance with the operation of medicines is the foundation of all rational practice in the cure of diſeaſes. Phyſicians, however, are by no means agreed in their opinions on this ſubject, which may be conſidered as a convincing proof that it is ſtill in an imperfect ſtate. To remedy this imperfection, therefore, as far as the nature of the ſubject will allow, ſhould be the endeavour of every one who means to practiſe medicine, either with advantage to others, or credit to himſelf.

From this conſideration I was induced to beſtow particular attention on the ſtudy of Therapeutics. The opinions which I formed in conſequence of this were ſome

time ſince ſubmitted to the examination of others in a courſe of lectures. For the benefit of ſuch as might attend theſe lectures, the Elements now offered to the pulic made their firſt appearance about two years ago. It may readily be imagined, that the intricacy of the ſubject, as well as many other circumſtances, would create no inconſiderable diffidence concerning the reception which would be given to a firſt performance. Even then, however, I ventured to reſt my apology upon my intention; and the event has ſince proved that my fears were in ſome degree imaginary.

I do not mean to inſinuate, that theſe Elements have eſcaped criticiſm. I have heard many obſervations upon them; I am ſenſible that not a few of theſe obſervations were well founded; and I think that I have on many occaſions profited by them. This

may be determined from the alterations which I have made. If any one will take the trouble of comparing the preſent with the former edition of this book, although he may not be able to judge of the pains which alterations have coſt me; yet he will eaſily be ſenſible that I have in many places endeavoured to correct it.

I have not indeed altered every thing to which objections have been made. In ſome particulars I ſtill continue to differ from authorities which I highly reſpect. With regard to theſe I cannot help ſtill retaining my former ſentiments; and it is certainly no compliment to adopt an opinion from any other motive than conviction. While I differ from reſpectable authority, however, it is ſtill ſome ſatisfaction for me to think that, if I be wrong, I am not ſingle in opinion.

Theſe Elements are divided into two parts: The firſt treats of Therapeutics in general; the ſecond, of particular claſſes of medicines.

In ſtudying any ſubject, the firſt requiſite undoubtedly is, to fix upon ſome plan, by proſecuting which, inquiries may be conducted with facility and advantage. After examining many writers on the Methodus Medendi, I could not help thinking, that ſuch a plan was in this ſubject particularly wanting. This part, therefore, appeared to merit particular attention.

In the inveſtigation of a plan, I have endeavoured to improve upon the labours of former writers. That which is here offered appears to myſelf leſs exceptionable than theirs. But of this the reader could only judge from a full view, both of the

plan itſelf, and of the principles upon which each part of it proceeds. I have, therefore, given a detail, at length, of the various arguments which may be advanced in ſupport of every branch of it; and have, beſides this, attempted to refute the moſt obvious, and, what I think, the ſtrongeſt objections which can be urged againſt it. How far I have ſucceeded, others muſt determine. But I am perſuaded, that thoſe who conſider the importance of this branch of the ſubject, will neither be ſurpriſed at the attention which I have beſtowed upon it, nor at the length to which it is extended.

In the ſecond part, I have endeavoured to give a complete view of the general doctrines of cure, or firſt principles of the practice of phyſic. Every claſs of medi-

cines is there conſidered by itſelf. In treating of each, I have endeavoured to point out the primary effects which it produces; the changes in the ſyſtem which happen in conſequence of theſe effects; the different orders into which it may be divided; the purpoſes to which it can be applied in the cure of diſeaſes; the circumſtances determining the choice of orders; the cautions to be obſerved in its employment; and the morbid affections by which it is contra-indicated.

In conſidering each of theſe heads, I have confined myſelf to ſimple aſſertions without either proofs or illuſtrations. Both theſe would perhaps have been neceſſary for obtaining the aſſent of the reader to many things here aſſumed as facts. But, had ſuch diſcuſſions been introduced, this book, in place of Elements, would have

ſwelled into a ſyſtem of Therapeutics. Although, however, it would have been inconſiſtent with my plan to have hinted at any arguments with a view to eſtabliſh the probability of doubtful aſſertions; yet I have always endeavoured to expreſs the propoſitions in ſuch terms as to render them eaſily intelligible without explanation. Thoſe who hear the proofs I can offer, will alone be able to judge how far they are ſatisfactory. Thoſe who only peruſe the following pages, will not, I hope, condemn every view here given, which may differ from their own opinions, upon the ſuppoſition that nothing can be alledged in ſupport of it.

This treatiſe is chiefly calculated for the benefit of thoſe who may hereafter attend

my lectures. I perſuade myſelf, however, that it will not be altogether uſeleſs to others who may give it an attentive reading. Thoſe who are anxious to arrive at truth will never be unwilling to hear and examine different opinions. To ſuch as have already beſtowed attention upon this ſubject, it may ſerve in ſome particulars to confirm, and in others, to correct former views. To ſuch as are beginning the ſtudy, it may ſave ſomewhat of that time and labour which it has coſt me to bring it to its preſent ſtate.

I am far from imagining, that either the plan which I have here propoſed is unexceptionable, or the account of particular claſſes free from imperfections and deficiencies. Senſible of the doubts and diffi-

culties which perplex all medical enquiries, I am well convinced that it could never be brought to ſuch a ſtate by the utmoſt labour or pains I am capable of beſtowing upon it. I flatter myſelf, however, that, from future obſervations, I ſhall hereafter be able to form more juſt and correct notions of this important ſubject; and, if theſe Elements ſhall ever make their appearance in a third edition, I hope it will not be without improvement. But, it would argue no leſs an unwarrantable contempt for the opinion of others, than an inexcuſable diſregard to my own character, were they not, as they now ſtand, as perfect as I am at preſent able to make them.

How far in this condition they may be of uſe for underſtanding my lectures, thoſe

who hear them will beſt be able to judge. How far they may be of ſervice from peruſal, the candid reader muſt determine. In the award of both I am ready to abide with reſpectful ſubmiſſion.

ELEMENTS

OF

THERAPEUTICS.

PART FIRST.

CHAP. I.

Concerning the preſent State of MEDICINE *in general, and of the* METHODUS MEDENDI *in particular.*

ARTS muſt have been, in ſome degree, coeval with the exiſtence of Man. An attentive conſideration of the genius of the human race, and of the circumſtances in which they are placed by nature, affords ſufficient arguments for e-

ſtabliſhing the probability of this aſſertion. If, from thence, a concluſion can be drawn concerning the antiquity of any art, it certainly may with regard to that of medicine. The art of medicine propoſes for its end, the preſervation of health, and the cure of diſeaſe. As the attainment of this end is ſo intimately connected with the happineſs of mankind, there is ſufficient reaſon for believing, that medicine would claim their attention, even prior to the earlieſt date at which it can be proved to have been exerciſed from the teſtimonies of records or tradition. Its origin, therefore, may juſtly be placed in the moſt diſtant antiquity.

The exerciſe of this art is impreſſed, by inſtinct, on the brute creation, dictated to mankind by the firſt dawnings of rea-

ſon, and daily enforced by motives of humanity. It cannot then ſeem ſurpriſing, that it ſhould have been cultivated without interruption, from its firſt introduction to the preſent time; and that every ſucceeding practitioner ſhould have endeavoured to avail himſelf of the improvements made by his predeceſſors. The importance of the end propoſed by medicine, furniſhes ſufficient proof that its cultivation and improvement muſt have been uniformly proſecuted with the utmoſt care and aſſiduity. A juſt ſenſe of the benefit of health, an inherent averſion to pain, and ſympathy for the ſufferings of others, would naturally inſpire ſuch attention.

Arts, in general, have been improved in proportion to the time during which they have been practiſed, and to the attention

beſtowed upon their cultivation. Medicine has been alledged to be an art of the higheſt antiquity, and to have been cultivated with the utmoſt attention. Were any judgement, then, to be formed of its preſent ſtate, from the progreſs which other arts have made in ſimilar circumſtances, it might naturally be concluded that, long before this, it ſhould have arrived at a very high degree of perfection and certainty.

But, in judging from the real ſtate of the fact, a very oppoſite concluſion muſt be drawn. It cannot be denied that medicine, although cultivated with every advantage which could be ſuppoſed to forward its improvement, is ſtill, at beſt, but a conjectural art.

This concluſion may indeed ſeem paradoxical to thoſe who content themſelves with a ſuperficial view of the ſubject. But it will not appear ſtrange to any one who has ſeriouſly conſidered the texture of the human frame. The extent and intricacy of an art which propoſes to regulate the motions and rectify the errors of an animated machine, cannot be judged of from any analogical compariſon with thoſe in which inanimate matter only is concerned.

It is not, however, from this, to be imagined, that medicine is an art in its nature ſo intricate, as to be totally incapable of progreſs; or that, amidſt numberleſs pretended improvements, there have not been diſcoveries of real utility. Thoſe who firſt addicted themſelves to the ſtudy of this art, muſt ſoon have diſcovered, that a thorough

inveſtigation of every part of it, was an undertaking greatly too extenſive for the limited capacity of any one man. From the nature of medicine, it affords an evident foundation for being divided into different branches. Such a diviſion is of as early a date as the firſt records of the art itſelf. That improvements might be facilitated, ſome have employed themſelves in the proſecution of one branch, ſome of another. In this way uſeful diſcoveries have been made in every branch of the art. But no one is yet arrived at ſuch a ſtate as to ſuperſede further attempts to improvement. Nor is it to be imagined that all of them have been cultivated with equal diligence and ſucceſs.

Authors are by no means agreed with regard to the different branches into which

medicine ſhould be divided. The great purpoſes of the art, however, are the preſervation of health, and the cure of diſeaſe. The method to be proſecuted for enjoying the firſt of theſe, muſt be left to the prudence of every individual; the direction of ſuitable means for obtaining the laſt, is the province of the phyſician. For the proper diſcharge of this office, an extenſive acquaintance with ſcience, in general, is highly requiſite. But, among the various branches of medicine moſt intimately connected with its chief intention, Therapeutics, or the Methodus Medendi, is univerſally allowed, by thoſe who have treated of the ſubdiviſions of the art, to merit particular attention.

Therapeutics, or the Methodus Medendi, may be defined, to be that branch of

medicine which treats of the operation of the different means employed for obviating diſeaſes, and of the application of theſe means. Taken in this ſenſe, it may be conſidered as delivering the general doctrines of cure, or firſt principles of practice. It is indeed intimately connected with the practice of medicine, ſtrictly ſo called, and with the materia medica. But it differs from the former, in as far as its object is not the treatment of particular diſeaſes; and from the latter, as it does not comprehend the natural or medical hiſtory of particular ſubſtances.

Having thus defined this branch of medicine, it is unneceſſary to obſerve, that it muſt be conſidered as of the higheſt importance. A knowledge of the operation of medicines is, as it were, the intermedi-

ate link between theoretical reaſonings and practical concluſions. By this alone a connection can be traced between the facts of the empyric, and the rules of the dogmatiſt. Upon this all rational practice muſt be founded. While, therefore, the Methodus Medendi is of great utility in the exerciſe of the profeſſion, it cannot, at the ſame time, fail to afford high entertainment to the philoſophic inquirer.

From theſe inducements to the ſtudy of this ſubject, it might naturally be imagined, that it would have been as much improved as any other branch of medicine. Notwithſtanding its importance, however, it may be affirmed, that it has hitherto been much neglected, and ſtill remains involved in great obſcurity and error.

This aſſertion may ſeem extraordinary, as being in ſome degree in contradiction to the common courſe of nature. In order to its being admitted, therefore, it may be neceſſary to offer ſome proof of its being well founded, and to endeavour to point out the cauſes from which it has ariſen.

The imperfection of Therapeutics is ſufficiently evident from the diverſity of opinions which are entertained with regard to the operation of almoſt every medicine. This may, no doubt, in ſome degree, be aſcribed to the difficulty of the ſubject. But it is alſo probable, that it is in a great meaſure owing to its not being ſufficiently cultivated. It cannot, indeed, be alledged, that the conſideration of this branch of medicine has been entirely neglected. It has often been a ſubject of inqui-

ry in medical writings, both treated of ſeparately, and as conjoined with other branches. Notwithſtanding this, however, it will appear, that it ſtill affords a particular opening for farther conſideration. The branches with which it has been conjoined, are, the account of particular diſeaſes, or what are ſtrictly called practical writings, and the account of the properties of different ſubſtances, or the materia medica. Before taking notice of the writings profeſſedly upon this ſubject itſelf, it may be neceſſary, in the firſt place, to conſider how far a knowledge of it may be acquired from either of theſe branches.

In writings on the practice of phyſic, particular diſeaſes are the ſubject of inveſtigation. After the hiſtory and cauſes of a di-

ſeaſe have there been conſidered, the indications are pointed out by which it may be removed. To each indication is ſubjoined an account of the different means by which it may be fulfilled, and of the proper method of applying theſe means. Thus, in dropſy, it is a very general indication of cure to evacuate the water. This evacuation may be produced both by manual operation, and by the uſe of different internal medicines. For this purpoſe emetics, purgatives, diuretics, and other ſimilar evacuants, are every day employed. Hence ſome obſervations upon theſe are inſeparably connected with the account to be given of the diſeaſe. But, in this place, to have attempted the inveſtigation, even of the method in which they produce the evacuation of water, would have been entirely foreign to the ſubject. Much leſs

would it have been proper here to have introduced any account of the other effects of theſe remedies. Thus, it appears, that under the treatment of a particular diſeaſe, a full account of the operation of theſe remedies, by which it may be removed, is not to be expected. The effects which medicines have upon the ſyſtem, and the means by which they produce theſe effects, are, by writers on the practice of phyſic, univerſally ſuppoſed previouſly known and ſtudied. When, therefore, as a neceſſary preliminary to the proper and ſafe uſe of any mode of cure, we are deſirous of being fully acquainted with its effects upon the ſyſtem, and with the manner in which it produces theſe; it is evident that ſome farther knowledge of this ſubject is neceſſary, than can be derived from writings ſtrictly practical.

Another branch of medicine with which Therapeutics are intimately conjoined, is, the Materia Medica. It may be imagined that the partial view of the ſubject to be obtained from practical authors will be fully ſupplied by the writings on this branch. Theſe, however, are not, more than the former, fitted for affording a complete knowledge of the Methodus Medendi. To illuſtrate this, it will only be neceſſary to ſurvey the preſent ſtate of the Materia Medica.

Were a judgement to be formed of the proficiency made in this ſubject, from the number of writings which every age has produced concerning it, the concluſion would be, that it had arrived at very great perfection. Could reliance be placed upon the accounts given by almoſt every author who

has treated of any particular medicine, this concluſion would be ſtill farther confirmed. But, on the contrary, if any one, in the leaſt converſant in practice, would form an opinion of this matter from what daily obſervation muſt teach him, he would not heſitate to affirm, that the dependence which can be had upon theſe accounts is but ſlight. Many properties have been aſcribed to almoſt every article of the Materia Medica, from inattention, credulity, or cunning; when, in reality, there was no foundation for ſuch ſuppoſed virtues.

Beſides theſe, there are other ſources of error on this ſubject, which, although they cannot be detected with equal eaſe, are, however, not leſs apt to miſguide. Among theſe, concluſions improperly deduced from

obſervation, even well founded, may be juſtly enumerated, and are, perhaps, not the leaſt conſiderable. When there occurs an undoubted example of the efficacy of any remedy in a particular caſe, it is but natural to ſuppoſe that it will have an effect equally advantageous in others apparently ſimilar. But, from the variety in conſtitutions, and the material difference in caſes ſeemingly the ſame, it is by no means ſurpriſing that general concluſions deduced from particular obſervations ſhould, in many caſes, be found repugnant to truth. Hence it is that, even by the moſt accurate writers on this ſubject, every remedy has been celebrated for properties much more conſiderable than it really poſſeſſes. Thus, to uſe the language of a celebrated author, The Materia Medica, like

the Augean ſtable, could not be cleared from its preſent errors without the labours of a ſecond Hercules. If this be the caſe, it may be conſidered as, at leaſt, one objection againſt an entire reliance on the authors on this ſubject, for an accurate knowledge of Therapeutics.

But, another and more valid objection may be drawn from the method in which this ſubject has, in general, been conſidered. The various articles are here, for the moſt part, treated of in an alphabetic, or ſome other ſimilar artificial order. But, a hiſtory of the Materia Medica, executed upon ſuch plans as theſe, labours under many inconveniences when uſed as the means for obtaining an acquaintance with Therapeutics.

Many ſubſtances, employed for the purpoſes of medicine produce upon the body effects very much ſimilar. Hence they have been formed into aſſemblages, and denominated by general terms, from their mode of action on the body. Examples of ſuch aſſemblages occur in the claſſes of Emetics, Cathartics, and many others of a like nature. From this ſimilarity in effects, it may reaſonably be concluded, that the different remedies comprehended under theſe aſſociations ſhould be fitted to remove the ſame morbid conditions in the body. But, although any particular indication may be anſwered by the uſe of ſeveral remedies, it is not from thence to be imagined, that equal benefit will be obtained from the promiſcuous employment of any one of them, as tending to produce a

radical cure. On the contrary, it will very univerſally hold, that particular advantage may be derived from a judicious choice. The circumſtances, however, from which alone any judgement can be formed concerning the cauſes of preference, are only to be learned from a compariſon inſtituted betwixt the articles thus poſſeſſed of the ſame general mode of operation. But it is difficult to do this, when theſe articles, though naturally conjoined, are, from an artificial arrangement, ſeparated in ſuch a manner, that, between them, attention muſt be paid to a variety of ſubſtances fitted for very different purpoſes. The difficulty, then, with which the general doctrines of cure can be learned from the hiſtory of particular articles, given by writers on the Materia Medica, when theſe articles are

arranged in any artificial order, is too obvious to require any additional proof.

But, beſides theſe objections againſt hiſtories of the Materia Medica, as a foundation for ſtudying the general doctrines of cure, it may be farther alledged, that, in this reſpect, they are highly deficient. Many medicines, as has already been obſerved, operate upon the ſame general principles. Hence many obſervations, applicable to one of them, may, with equal propriety, be made concerning others. Thus, a proper view of the general principles of operation which apply to a whole claſs of medicines will entirely ſuperſede the neceſſity of repetitions under every particular article. On this account, writers on the Materia Medica eſteem it ſufficient to inform their readers of the qualities of any particular ſub-

ſtance, whether it be emetic, purgative, diaphoretic, or the like; and of the degree in which it poſſeſſes theſe qualities. But, to have endeavoured, under each article, to point out in what manner vomiting, purging, or ſweating, are produced, would have been an attempt highly abſurd. Hence they have altogether waved ſuch general inquiries.

It muſt, however, be allowed, that, altho' the conſideration of theſe operations on the ſyſtem could not, with propriety, enter into the hiſtory of the particular articles; yet many writers on the Materia Medica have ſupplied this deficiency, by previouſly delivering an account of theſe general doctrines. But, what they have ſaid in this way, may be eſteemed profeſſedly therapeutical, and, in this view, will afterwards

come under conſideration. This, therefore, cannot be employed as an argument to invalidate what was formerly advanced to prove the inſufficiency of the writings on the Materia Medica as a means of ſtudying the general doctrines of cure.

Thus, it appears, that many objections may be adduced againſt the writings on the Materia Medica as a means of acquiring the neceſſary knowledge of Therapeutics. Of theſe writings, in general, it may be obſerved, that, as abounding with errors, as ſeparating the conſideration of medicines by nature connected, and as not attempting to explain the general principles of operation, they muſt be altogether inſufficient for this purpoſe. Hence it appears, that a proper acquaintance with the Methodus Medendi is not to be acquired from even

the moſt complete conſideration of thoſe branches of medicine with which it is moſt immediately conjoined.

After theſe obſervations on the branches of medicine in which Therapeutics have been treated of in a ſecondary way, it now only remains to conſider the writings profeſſedly upon this ſubject. From theſe a proper knowledge of it may moſt reaſonably be expected. In their preſent ſtate, however, they ſeem to be as inadequate for this purpoſe as thoſe already mentioned.

The number of authors who have treated of this branch of medicine cannot, indeed, be ſaid to be inconſiderable. At the ſame time, when the writings on this ſubject are compared with thoſe on the other

branches of medicine, their number will ſcarce ſeem proportioned to its utility. It is, indeed, true, that few authors on the general ſubject of inſtitutions have left this branch entirely untouched. When, however, in their writings it obtains a ſeparate conſideration, it is, for the moſt part, put poſterior to the extended and intricate ſubjects of phyſiology and pathology. From this circumſtance, it is uſually paſſed over with leſs attention than its importance merits.

Many of the firſt writings on this ſubject, although not exceptionable upon account of their brevity, are, however, liable to objection on another account. Thoſe which were prior to the diſcovery of the circulation, and of the general laws of the nervous ſyſtem, from which the operation

of medicines muſt, in a great meaſure, be accounted for, can be conſulted with but little advantage. It is now neceſſary to reject opinions which, from the ignorance or miſtaken notions of thoſe who propoſed them, with regard to the leading principles in the oeconomy, will, without a very minute examination, appear ill founded. What is to be expected, therefore, from writings on this ſubject, muſt be derived from thoſe of a modern date.

It cannot, indeed, be affirmed, that the Methodus Medendi has, of late, been entirely neglected. But, the moſt eſteemed authors on this ſubject, who have written ſince the laws of the ſyſtem were better known, have either belonged to the Stahlian ſect, or have implicitly adopted the

mechanical philoſophy. To enter into any particular detail of what may be eſteemed exceptionable in their doctrines would be entirely foreign to our preſent purpoſe. It may, however, without heſitation, be affirmed, that the opinions of neither are, by any means, to be univerſally admitted. Upon the juſtice, however, of their particular theories, the truth of what they have delivered concerning the operation of medicines, muſt totally depend. Hence their writings will, in many particulars, be diſregarded by all who are not implicit followers of their tenets. Thus, the modern writings upon this ſubject are, in many reſpects, not leſs exceptionable than thoſe of a more ancient date. From all that has been ſaid then, it appears, that what has expreſsly been written upon the ſubject of Therapeutics, muſt be conſider-

ed as an insufficient foundation for obtaining such a knowledge of this branch of medicine as is necessary for the cure of diseases, when meant to be followed out upon consistent or rational principles.

If what has been advanced, then, be well founded, it follows, that the writings professedly therapeutical are to be esteemed imperfect and defective. And, it may farther be concluded, that these deficiences and imperfections can neither be supplied by the writings on the Materia Medica, nor on the practice of medicine; the only sources from which it could be expected. There will remain then little difficulty in assenting to the proposition formerly laid down, that this branch of medicine, notwithstanding its utility and intimate connection with the grand purpose

of the healing art, is ſtill involved in great obſcurity and error. Hence the imperfect ſtate of this ſubject, as well as its importance, may be conſidered as powerful inducements to attempts towards farther improvement.

CHAP. II.

Concerning the general Diſtribution of the different Articles of the METHODUS MEDENDI.

THE practice of all ages has afforded numberleſs obſervations concerning the effects reſulting from almoſt every article employed in the cure of diſeaſes. Many experiments have been made with a view of aſcertaining the properties of particular medicines. From theſe ſources, it may readily be imagined ſufficient data are afforded for carrying the theory of the action of remedies to as great a degree of perfection as any other branch of the medical art. For improvement on this ſub-

ject, therefore, what is principally required, is not ſo much the addition of new facts, as a judicious ſelection of ſuch as will admit of undeniable proof, and a proper application of them to the formation of general rules. Hence the firſt ſtep to improvement will conſiſt in the formation of a proper plan for generalizing facts.

In attempts for this purpoſe, authors have, for the moſt part, aimed at general ſyſtematic arrangement. With this intention, the ſubject is uſually introduced with a Clavis Claſſium, exhibiting a general view of the whole. When ſuch views can be obtained in perfection in any branch of ſcience, they are unqueſtionably of very great utility. Even in their moſt imperfect ſtate, they are never without ſome advantages. In this condition, they will of-

ten ſerve to give a more clear and connected view of the ſubject than could otherwiſe be obtained. But it muſt, at the ſame time, be obſerved, that every ſyſtematic arrangement, in any degree imperfect, is attended likewiſe with diſadvantages. Hence, before it can with propriety be admitted, while in this condition, it is neceſſary to conſider which of theſe preponderate. And if, from examination, it be found, that the diſadvantages are ſuperior, it muſt certainly be conſidered as inadmiſſible. This indeed cannot be deemed any ſufficient reaſon for diſcontinuing attempts to improvement; but, it will afford a concluſive argument againſt adopting any ſcheme in ſuch a ſtate of imperfection, as to give erroneous ideas of the ſubject which it is intended to illuſtrate.

This aſſertion, with regard to methodic arrangement in general, will not be queſtioned. If then it ſhall appear, that even the beſt general views hitherto given of this branch, are in ſuch a ſtate of imperfection; the concluſion againſt adopting them will be ſufficiently obvious. To determine this, therefore, it becomes neceſſary to examine to what concluſions the beſt arrangements on the Methodus Medendi naturally lead. It may perhaps ſeem extraordinary to affirm, that the moſt accurate views hitherto given of this ſubject, are not only inadequate for the purpoſe propoſed by them, but tend alſo to give an erroneous idea of the operation of medicines. Upon attentive examination, however, it will appear that this aſſertion is by no means without foundaton.

General ſyſtematic arrangement ſuppoſes that the ſubject to be treated of can be fully comprehended under a few ſeparate and diſtinct heads. Theſe are to be branched out by ſubdiviſions till they arrive at individuals. In forming theſe ſubdiviſions, it is neceſſary that every inferior aſſociation ſhould be a proper conſtituent part of the more general head, to which it belongs. It muſt, at the ſame time, remain ſeparate and diſtinct from every diviſion on a level with it, and from every ſuperior diviſion from which it is not directly deduced. While this preciſion can be obtained, the end propoſed by methodic arrangement will be fully anſwered. But when articles, which ſhould be ſeparate and diſtinct, come to be confuſed and blended with each other, the intention of ſyſtem is entirely

fruſtrated. Theſe obſervations are ſufficiently illuſtrated and confirmed from the uſe which has been made of ſyſtematic arrangement by Botanical writers.

If accurate and preciſe diſtinctions between different members of a diviſion be neceſſary for obtaining the advantages of general ſyſtem, little benefit can be expected from it in the Methodus Medendi. The nature of this ſubject will by no means admit of diviſion with theſe conditions. This will appear ſufficiently evident from the examination of any ſyſtematic arrangement hitherto attempted.

In the leaſt exceptionable arrangements the general diviſion commonly inſtituted is, that medicines act either upon the ſolids, or upon the fluids. It is indeed true,

that every medicine may be reduced to one or other of theſe heads. But, where there ſubſiſts a connexion ſo intimate as that betwixt the ſolids and fluids of the human body, it is almoſt impoſſible to conceive that the ſmalleſt change can be produced upon the one, which will not, in ſome degree, affect the other alſo. If this be the caſe, every medicine may, with propriety, be referred to both heads. Thus, the beſt ground for diſtinction of which the nature of the ſubject will admit, even in the firſt ſteps toward method, muſt be entirely reſted upon the vague and uncertain footing of a ſuperior degree of action. This however can never be granted to be a ſolid foundation for preciſe diviſion.

From what has been ſaid, then, it appears, that the nature of the Methodus

Medendi does not admit of any certain characteriſtics by which particulars comprehended under one branch, may be diſtinguiſhed from thoſe referred to another. It muſt be allowed that arrangement, without theſe, in any branch of ſcience, if not apt to miſlead and retard its progreſs to a more perfect ſtate, has, at leaſt, no tendency to forward its improvement. But it appears that even the foundation of methodic arrangement on the ſubject of Therapeutics, is liable to objection. Although, therefore, it ſhould be alledged that a ſyſtematic view of the ſubject, thus defective, will be attended with no bad effects; yet it may with confidence be affirmed, that it can be productive of no advantage.

But the mere want of utility is not the only objection which may be urged againſt

a ſyſtematic view of this ſubject when proſecuted to inferior diviſions. Were any reliance to be put upon this arrangement when carried down into the claſſes into which medicines are uſually divided, in place of being attended with any good effect, it would be apt to miſlead in enquiry, and to miſguide in practice. This may be proved by conſidering the concluſions which would be formed concerning any claſs of medicines, even from the beſt ſyſtematic arrangements yet extant. A ſtriking example occurs in the claſs of epiſpaſtics. Theſe remedies, in the firſt place, have been referred to the general diviſion of medicines acting upon the fluids, in oppoſition to thoſe acting upon the ſolids. They have next been limited to the tribe of evacuantia in oppoſition to the alterantia. And, laſtly, they are referred to the

ſubdiviſion of medicines evacuating ſerum, in oppoſition to thoſe evacuating ſaliva, urine, perſpirable matter, or other ſecreted fluids. From this method, then, of arranging epiſpaſtics, we would undoubtedly be led to conclude, that they are a ſet of remedies which affect the body only; that there they act upon the fluids alone; that the ſole change they produce upon theſe is a diminution of their quantity; and that this diminution proceeds entirely from a diſcharge of ſeroſity. Even the ſlighteſt obſervation, however, will be ſufficient to convince us, that the greateſt part, if not the whole, of theſe concluſions are entirely without foundation.

The action of bliſters, from this view of the matter, is merely corporeal. But daily experience affords ſufficient proof

that they act upon the mind as well as upon the body. The power which they poſſeſs of exciting pain, is neither leſs certain, nor, perhaps, leſs uſeful, as the means of obviating morbid affections of the ſyſtem, than that of evacuating ſerum. With an intention to excite pain, they are frequently indicated, and often employed.

Beſides this, the changes which bliſters produce upon the body are by no means confined to the fluids alone. The ſolids of the body, from their action, are manifeſtly and variouſly affected. Even the evacuation of fluids which they occaſion, can be conſidered as nothing elſe but the conſequence of an increaſed action in the ſolids. Every ſenſation has ſome effect upon the ſolids. This particularly holds with regard to painful ſenſations. It can-

not, therefore, be imagined, that one ſo conſiderable as ariſes from the uſe of bliſters will take place without their being remarkably affected. Whether, then, a judgement be formed from the nature of bliſters, or from their effects, it muſt appear an undeniable fact, that they act upon the ſolids of the body, as well as upon the fluids.

Farther, the change which bliſters produce upon the fluids does not merely conſiſt in a diminution of quantity. They may, with great juſtice, be reckoned to alter the ſtate of the fluids, as well as to evacuate. They do not diſcharge a portion of fluids from the body in that ſtate in which they circulate in the larger veſſels. The abſtraction, which here occurs from the general maſs, conſiſts entirely of a particular

part of the fluids. It is, however, an eſtabliſhed fact, that if, from any heterogeneous fluid, there happens a diminution of one component part only, the nature of the remaining maſs muſt be changed. Hence, they are improperly ſet in oppoſition to thoſe medicines termed the Alterantia.

Laſtly, viewed as evacuants, they can, by no means, be conſidered as a ſet of medicines merely diſcharging ſerum. In many caſes, the diſcharge produced by epiſpaſtics, eſpecially if kept up for any conſiderable time, becomes manifeſtly purulent. There can be no queſtion that, when this is the caſe, ſomething more than ſeroſity is diſcharged by them. There is a preſumption that it is not ſerum only which is evacuated, even when the diſcharge is,

to appearance, moſt ſerous. It is a difficult matter to deprive the ſeroſity of every mixture of the ſaline parts, and of the coagulable lymph; and, in the ordinary caſes of bliſters, that the ſerum diſcharged, contains a proportion of theſe, is not to be doubted.

Thus, it appears, even from the moſt ſuperficial view of the nature of bliſters, that their action is much extended over the whole ſyſtem. Their employment in diſeaſes, therefore, from a perſuaſion that they act merely as evacuants of ſerum, would be a practice, not only unſucceſsful, but raſh, and, perhaps, even dangerous.

Hence, the conſequences which reſult from ſyſtematic arrangement in a ſtate of ſuch imperfection, when applied to the Me-

thodus Medendi, are ſufficiently manifeſt. The opinion which would be formed of bliſters, or indeed of any other claſs of medicines, from concluſions deduced from thence, would be erroneous in almoſt every particular.

If an erroneous idea only can be obtained from methodic arrangement when applied to the inveſtigation of the nature of medicines, it is needleſs to obſerve, that reliance upon it could ſerve no other purpoſe but to miſguide in practice. Methodic arrangement, indeed, upon the ſuppoſition that the nature of this ſubject would admit of a ſyſtem leſs exceptionable, might be of the greateſt utility in giving a clear and connected view of the means of cure in general. But, in the preſent ſituation, it is evident, that no general ſyſtem could be

followed which would be uſeful, or even not prejudicial. Without attempting the difficult work of correction, it may be proper to conſider how far this ſubject may, with advantage, be treated on a different footing.

It has already been obſerved, that many remedies have, in their nature, a great deal in common with each other. Theſe, although their effects be not in every particular the ſame, operate very much upon the ſame general principles. Hence they are, in a great meaſure, fitted for the ſame general intentions of cure. The different individuals, thus agreeing in their nature, and, on that account, aſſembled into a claſs, may be conſidered with greater advantages taken together, than disjoined. By this means, the labour which would otherwiſe

attend the inveſtigation of the properties of remedies, will be greatly ſhortned; and repetitions, which, were every article to be conſidered ſeparately, would be almoſt endleſs, will be in a great meaſure avoided. It will naturally occur then, as a firſt requiſite in treating this ſubject, that the different articles be diſtributed into proper aſſociations.

But while, on the one hand, it would be tedious and improper to treat of the operation of every mode of cure by itſelf; ſo, on the other, there would be an equal error in the formation of very general or extenſive claſſes. By this means, indeed, the labour of enquiry might be greatly ſhortned: But the general doctrines which ſhould be delivered concerning an extenſive claſs of medicines would be by

no means applicable to all the individuals comprehended under it. Hence the diſtribution of the different articles into ſuch general aſſociations is liable to objection, as being an imperfect method of explaining the action of particular remedies.

Objections indeed alſo occur to a diſtribution into very limited aſſociations. To theſe it may be objected, that, in this manner, no proper diſtribution can be obtained. When, for example, emetics, cathartics, diaphoretics, or ſuch ſimilar claſſes, are taken as the higheſt aſſociations, it may be alledged that there are many individuals which, with equal propriety, fall under ſeveral of theſe claſſes. From this circumſtance, a degree of confuſion will not only ariſe, but the opinion delivered of the operation of theſe articles will, in the

firſt inſtance, at leaſt, be defective and imperfect.

To this, however, it may be anſwered, that, although there may be individuals, with propriety, referable to ſeveral claſſes, yet the powers which they poſſeſs, as operating in one particular way, are ſo very conſiderable, as greatly to outweigh their other properties. Where this is not the caſe, the difference of effects reſulting from them, in conſequence of which they have a title to be referred to more than one claſs, is produced, either from the quantity employed, the mode of adminiſtration, particular management, or ſome other evident cauſe. But, where a diverſity of effects reſults from ſuch cauſes as theſe, the remedies uſed may, in fact, be conſidered as different. In this point of view, there can

be no impropriety in their being referred to more than one claſs.

Inſtances of individuals belonging to a plurality of claſſes, where the ſeeming inconvenience thence reſulting cannot be obviated in one or other of theſe ways, are but few. When they do occur, the difficulties thence ariſing are but of ſmall account, if compared to what would have been the conſequence of more general aſſociations. In the formation of aſſociations, then, ſuch medicines only are to be reduced to the ſame claſs, as anſwer to a preciſe and limited definition, as operate upon the ſame general principles, and as are fitted for the ſame general purpoſes, in the cure of diſeaſes. Claſſes formed with theſe conditions will indeed be limited in their nature. But, it muſt be remembered, that,

when medicines are applied to uſe, if they be employed with any rational intention at all, they are given with a view of operating as belonging to claſſes not more general. Thus, in every day's practice, nothing is more common than to aim at fulfilling particular indications by emetics, cathartics, or ſimilar claſſes.

Many are the particular articles employed as remedies. From reflecting upon the number of them, it may be imagined, that aſſociations formed with the conditions above mentioned, would be both numerous and unequal. They will be numerous, becauſe, from the great diverſity of individuals, there muſt be conſiderable varieties in the general mode of operation. They will be unequal, becauſe, on the one hand,

many individuals are often poſſeſſed of the ſame common properties; and, on the other, a few not unfrequently operate in a manner peculiar to themſelves. But from the latter of theſe circumſtances no inconvenience will reſult; and, without the former, truth cannot be inveſtigated. Any objection, therefore, which can be adduced from theſe ſources, againſt a diviſion into limited claſſes, muſt be very inconſiderable; and, even in this ſtate, it may be conſidered as unavoidably connected with the nature of the ſubject.

Beſides the objections already adduced againſt the general plan now propoſed, another ſtill remains to be obviated. This ſyſtem is perhaps leſs exceptionable from the number and inequality of claſſes which will fall to be conſidered, than from the

difficulty which will attend the formation of proper aſſociations. From the want of a proper knowledge of individuals, the aſſociations which can be formed, will, in many inſtances, be deficient, wanting articles, which with propriety ſhould be referred to them. In others, they will be redundant, comprehending individuals which do not properly belong to them. But the inconveniencies reſulting from thence are in common to this ſpecies of arrangement with every other. They cannot therefore be conſidered as any objection againſt it in particular. Difficulties and imperfections will attend arrangement in every branch of ſcience. It would therefore be ridiculous to imagine that they ſhould be wanting in this more than in others.

From what has been ſaid it appears, that the beſt method of conſidering this ſubject is, by reducing the different articles employed as remedies into preciſe and limited aſſociations. Theſe aſſociations are to be formed from a general ſameneſs in properties. They may be conſidered as in ſome degree analogous to the natural orders in Botany, as being founded more upon the general character, than upon any ſtriking or artificial mark. By a proper conſideration of the independent aſſociations thus formed, treating of each ſeparately, and as unconnected with every other, the inconveniencies, on the one hand, reſulting from a particular inveſtigation of the properties of every article by itſelf, and, on the other, from general ſyſtematic arrangement, will be equally avoided. This method will neither tend to convey any er-

roneous idea of the operation of medicines, as occurs from the latter, nor will it lead to prolixity and repetition, by disjoining the consideration of articles naturally connected, as is the consequence of the former. Although, therefore, it cannot be supposed to be entirely free from objections; yet it appears to be the mode of arrangement best fitted for delivering the general doctrines applicable to the different remedies employed in the cure of diseases.

CHAP. III.

Concerning the different Claſſes into which Medicines may be diſtributed.

THE great improvers in medicine, as well as in the other branches of ſcience, ſeem univerſally to have been deſirous of aſſociating together things which, in their nature, appear to have an obvious connexion. No branch of ſcience affords a more manifeſt foundation for aſſociations than that which treats of the different articles employed for the cure of diſeaſes. To this probably it is owing, that a diſtribution of medicines into claſſes is at leaſt as ancient as the firſt medical writings now extant, perhaps as the art of medicine itſelf. From the prevailing paſſion for no-

velty, as well as from attempts to improvement, it may readily be imagined that, during a period ſo extenſive as that in which medicine has been practiſed, many different diſtributions would be formed, and, of courſe, a variety of general terms introduced for expreſſing theſe. The aſſociations thus formed have very univerſally been attempts towards natural orders. They are, therefore, an obvious foundation from whence may be ſelected thoſe claſſes under which it has been alledged the conſideration of Therapeutics may be conducted with greateſt advantage.

It has already been obſerved, that the aſſociations formed by different writers, and the terms uſed to expreſs them, are numerous. Many of theſe diviſions are intended merely as improvements upon for-

mer ones. All the claſſes, therefore, which have been introduced by different authors, are by no means to be promiſcuouſly adopted. It would, however, be no leſs tedious than diſagreeable, to aſſign particular objections againſt every aſſociation not afterwards to be admitted. But it is not from thence to be imagined, that there are no reaſons directing to a proper choice. It will by no means be ſufficient, out of the numerous aſſociations which have been formed, to adopt a few at random. To point out the foundation upon which a choice has here been made, it may be neceſſary briefly to mention what is principally required in the aſſociations, and to aſſign ſuch general reaſons for rejection, as will moſt readily apply to particular caſes. By this means a foundation will be laid for determining with what

propriety ſome claſſes are here admitted, and others rejected.

For anſwering the end propoſed by diſtributing the Methodus Medendi into independent aſſociations, it is neceſſary that every claſs adopted be a natural one. By this it is to be underſtood that the articles comprehended under it produce the ſame effects, and that their operation is to be accounted for upon the ſame general principles. The moſt eaſy method of obtaining aſſociations with this condition would be by admitting a great number, each comprehending only a few articles. But, by having recourſe to this expedient, if carried to any great extent, the intention of forming aſſociations would be entirely fruſtrated. Hence it becomes a ſecond requiſite,

that every aſſociation ſhould be as general as is compatible with its being natural. For this purpoſe, it is particularly neceſſary to avoid the ſubſtitution of what ſhould only be eſteemed proper ſubdiviſions of claſſes for claſſes themſelves. Under a few claſſes, with theſe conditions, many individuals will be comprehended. But, that a complete view may, in this manner, be had of the ſubject, a third condition is requiſite. It is neceſſary that all the claſſes taken together, ſhould comprehend every individual, with propriety, referable to the Methodus Medendi.

From the different requiſites mentioned above, the foundation upon which the ſelection of claſſes muſt proceed, is manifeſt. Theſe conditions may be obtained, as far as

the nature of the ſubject will admit, from adopting the following twenty-four claſſes:

1. Emetics.
2. Cathartics.
3. Diaphoretics.
4. Epiſpaſtics.
5. Diuretics.
6. Expectorants.
7. Errhines.
8. Sialagogues.
9. Blood-letting.
10. Emmenagogues.
11. Anthelmintics.
12. Lithontriptics.
13. Antacids.
14. Antalkalines.
15. Attenuants.
16. Inſpiſſants.
17. Antiſeptics.

18. Aſtringents.
19. Emollients.
20. Corroſives.
21. Demulcents.
22. Stimulants.
23. Sedatives.
24. Antiſpaſmodics.

That theſe claſſes may fulfil the conditions formerly pointed out, it is neceſſary that they ſhould conſtitute what may be eſteemed natural orders of medicines; and that they ſhould comprehend all the particular remedies employed for the cure of diſeaſes. How far theſe purpoſes will be anſwered by the claſſes here ſelected, can only be determined by conſidering the account hereafter given of each; and by comparing a liſt of the means of cure now em-

ployed, with the particulars which may be comprehended under them.

After adopting theſe general aſſociations, it naturally follows, that ſome reaſons ſhould be aſſigned why many others have been ſet aſide. Without attempting to deſcend to to particulars, the cauſes of rejection may be determined from one or other of the following general objections.

What may be mentioned as the firſt, and will perhaps apply as the moſt extenſive cauſe of rejection, is the impropriety of many aſſemblages. Not a few general terms are employed by medical writers for denominating claſſes of medicines where in reality there is no foundation for aſſociating together the different articles comprehended under them. All theſe claſſes, in-

deed, have been formed upon a ſuppoſition that the individuals which they comprehend poſſeſs ſome common property. Frequently, however, the proof of ſuch a property is reſted merely upon ſuppoſition. But ſuppoſition, it will readily be allowed, is by no means a proper baſis for the formation of aſſociations. There can be no queſtion then with regard to the juſtice of rejecting claſſes of medicines eſtabliſhed upon ſo uncertain a foundation.

But, beſides the claſſes founded upon ſuppoſed effects, there are others alſo, which are exceptionable upon the ſcore of impropriety. Claſſes of medicines founded upon a ſingle effect, although it may be eſtabliſhed and certain, are equally liable to objection. A ſingle effect may be produced in very different ways, and even upon per-

fectly oppoſite principles. Upon ſuch a foundation as this, therefore, medicines will often be connected, which in reality ſhould be disjoined. A ſingle effect can by no means be conſidered as a ſufficient baſis for a natural aſſociation, where all the articles muſt operate upon the ſame general principles. Hence, upon the plan now propoſed, claſſes of this nature neceſſarily fall to be rejected.

Another cauſe of rejection ariſes from the extent of claſſes. Many aſſociations, in other reſpects ſufficiently proper, have been ſet aſide, as being more general than the plan here adopted will admit of; others, as being too limited. After what has been ſaid with regard to the requiſites of claſſes, when the Methodus Medendi is to be conſidered upon the plan here propoſed, any

farther illuſtration of theſe grounds of excluſion would be unneceſſary. Of the former, an example occurs in the claſs of medicines termed Deobſtruents, and of the latter, in that of Carminatives.

The laſt ground of rejection to be mentioned, and one which is ſufficiently obvious, ariſes from the diverſity of terms employed to expreſs aſſociations. Many general terms uſed by different authors are ſet aſide, as being ſynonymous with others here adopted, and in reality already admitted. Examples where this is the caſe will occur from the moſt ſuperficial view of the liſt which has been given. To point out any particular inſtances, therefore, would be altogether unneceſſary. From theſe general reaſons, it will be no difficult matter to determine why the

claſſes here employed have been admitted in preference to others.

Having thus attempted to point out the grounds for ſelecting the aſſociations here adopted, it may next be expected that ſome reaſon ſhould be aſſigned for arranging them in the order in which they have been placed. At leaſt, it may occur as a queſtion, whether this order be merely accidental or intentional. From what has already been ſaid with regard to the general plan here propoſed to be followed, it may be concluded that this circumſtance is very immaterial. Each claſs is to be conſidered as independent and ſeparate from every other. The order, therefore, in which they follow each other would ſcarce ſeem

to merit attention. Notwithſtanding this, however, there are reaſons why one order is in ſome degree preferable to another.

From the objections which were formerly adduced againſt general ſyſtematic arrangement, it appeared that, in its preſent ſtate, it could not be admitted in this ſubject without manifeſt prejudice. But, it muſt be allowed, that the ſame advantages may, in ſome meaſure, be obtained from conſidering, immediately after each other, claſſes in their nature ſomewhat ſimilar, as from ſubjoining to each other, the account of particular articles belonging to the ſame claſs.

Beſides this, one order is better fitted to facilitate the explanation of claſſes than another. In the animal machine, indeed,

there ſubſiſts what may be ſtiled a circle of cauſes. Yet, the conſideration of ſome claſſes will readily afford data upon which ſubſequent ones may be explained. The reaſons, therefore, why one order in placing the claſſes is preferable to another, are ſufficiently manifeſt. The primary effects of medicines, as directly exerted upon the ſolids, the fluids, or the ſentient nerves, are the general principles which, although not ſtrictly or implicitly followed, have chiefly regulated the formation of the liſt here given.

CHAP. IV.

Concerning the Inveſtigation of the Nature of Claſſes.

FROM what has already been advanced, it appears, that, in attempts towards the improvement of Therapeutics, the firſt object of attention is, the diſtribution of the different articles into ſeparate and independent aſſociations. Theſe being formed, it will naturally occur as the next requiſite, that ſome proper plan ſhould be delivered, upon which the general doctrines reſpecting each may be fully inveſtigated.

To point out the moſt proper plan for conſidering particular claſſes of medicines,

is a matter perhaps not leſs difficult than the diſtribution of individuals for the formation of them. But, while an order altogether unexceptionable is not to be expected, there are perhaps few plans which have not ſome advantages. To obtain theſe in as high a degree as is conſiſtent with the nature of the ſubject, is an object both attainable and important. For this reaſon it well deſerves conſideration.

Many advantages may undoubtedly be derived from delivering the general doctrines reſpecting claſſes on a proper plan. But the end principally to be aimed at is to conduct the conſideration of each claſs in ſuch a manner as to obtain a full and connected view of the operation of the different articles comprehended under it. From thence only can thoſe purpoſes to

which it is applicable in the cure of diſeaſes, be with eaſe determined.

To obtain this end, it will be neceſſary to conſider, under a ſeparate and diſtinct head, what may be termed the nature of each claſs. Under this general head is to be comprehended the whole theory of the operation of a claſs, as far as that can be deduced from obvious facts or undeniable obſervations. That a more diſtinct view may be had of the nature of any claſs, it is particularly neceſſary that the enquiry be not perplexed with any remarks upon the ſuppoſed or real purpoſes to which it can be applied in the cure of diſeaſes. The effects of any claſs of medicines, from which alone its nature can be inveſtigated, are thoſe which it will produce in the animal frame, whether in a ſound or morbid ſtate.

By fair deductions from theſe only it can be applied with a view to obviate or remove morbid conditions in the body. Under this head of enquiry then, the general effects of any claſs are alone the ſubject of examination.

This method of attempting to lay a foundation for inveſtigating the uſe of any particular claſs of medicines is by no means to be conſidered as entirely free from objections. Many varieties in the operation of medicines are produced by morbid conditions in the ſyſtem. By confining the enquiry to the conſideration of general effects, theſe are in a great meaſure excluded. To this plan then it may very naturally be objected, that the operation of many medicines in the cure of diſeaſes depends entirely upon the exiſtence of pecu-

liar morbid ſtates. It is frequently, in conſequence only of a particular ſtate in the ſyſtem, that medicines produce thoſe changes which are fitted to remove a morbid affection occaſioning a particular diſeaſe. It may therefore be concluded, that this head of enquiry cannot, with propriety, be entirely limited to general effects.

That, in ſome inſtances, this is really the caſe, is undoubtedly true. Hence, in conſidering the nature of claſſes, an abſolute excluſion of morbid conditions will not, in every caſe, be practicable. But theſe effects will, in moſt caſes, be treated of with greater advantage, when the application of the claſs to the peculiar morbid condition on which they depend comes to be explained. Where, therefore, the conſideration of theſe, as well as extraordina-

ry phaenomena which may ariſe from ſingularity in conſtitution can admit of being delayed, they will be beſt conſidered when the uſe of the claſs comes to be the ſubject of inveſtigation.

By this means, that confuſion which would ariſe from blending the general with the particular effects of a claſs, will be avoided. At the ſame time, the conſideration of the effects will not be leſs compleat. The facts then chiefly to be employed in explaining the nature of any claſs of medicines, are thoſe effects which it moſt generally produces in the ſyſtem. The conſideration of morbid conditions is only to be introduced in caſes where, from the nature of the claſs, its action entirely depends upon the preſence of ſome particular ſtate in the ſyſtem.

Having thus, in a general way, mentioned the ſubject of conſideration under the nature of each claſs, it will next be neceſſary to point out the proper ſubdiviſions of this general head. Before entering into any detail of the effects of a claſs, or attempting to deduce any concluſions from thence, it will be neceſſary to determine of what articles it properly conſiſts. On this account, in the enquiry into the nature of every claſs, it is neceſſary to begin with a definition.

The marks by which any claſs of medicines can be defined, are undoubtedly its moſt general and obvious properties. Theſe will not only be moſt readily detected, but, beſides this, are neceſſary to render the definition ſo extenſive as to apply to all the individuals which are meant to be

comprehended under the aſſociation. But, in order to render a definition ſtrictly logical, this is by no means all that is neceſſary. A proper definition ſhould not only apply to every particular which is intended to be referred to the term defined, but ſhould likewiſe exclude every thing not meant to be comprehended under it. It is however certain, that the general and leading properties of different claſſes of medicines are not unfrequently poſſeſſed by ſubſtances which cannot, with ſafety or prudence, be employed to anſwer the purpoſes for which theſe claſſes are intended. The general and leading properties of claſſes then, will not, in every caſe, be of themſelves ſufficient to conſtitute a proper definition.

If the different articles of the Methodus Medendi are to be conſidered under inde-

pendent claſſes, it is neceſſary that the definition of each ſhould be limited and preciſe. But, if this preciſion cannot be obtained from the general properties of the claſs itſelf, other characteriſtics muſt be ſought for. The preciſion neceſſary in a definition will, in ſuch caſes, be had, from the introduction of a clauſe, for the excluſion of thoſe ſubſtances which may moſt readily be blended with the claſs. The moſt obvious ground for this is any property by which theſe ſubſtances are rendered unfit for anſwering the purpoſes of the claſs. Hence, for obtaining a proper definition, where the general properties of the claſs are inſufficient, negative diſtinctions muſt ſometimes be introduced.

After a claſs has been properly defined, the next ſubject of inveſtigation naturally

preſenting itſelf, is an account of the primary or direct effects reſulting from the employment of it. This head of enquiry is very univerſally treated of under the general term of Modus operandi. When this is adopted as a head of enquiry, the conſideration of the more immediate effects is conjoined with that of the ſubſequent changes in the ſyſtem reſulting from theſe. But, although this be ſo commonly adopted as a ſingle ſubject of enquiry, yet, to evince that there is in nature a foundation for a diviſion into the two branches now mentioned, it will only be neceſſary to have recourſe to an illuſtration from any particular claſs. Thus, in the caſe of Emetics, it will readily be allowed that there is a material difference between the action of any individual belonging to the claſs as tending to produce vomiting, and the ef-

fects of vomiting when produced. It is evident, therefore, that the diviſion here propoſed is by no means imaginary.

But, it is not more evident that there is in nature a foundation for this diviſion, than that advantages will reſult from its being inſtituted. In this way the natural progreſs of effects will be accurately obſerved. Obvious facts will be ſeparated from concluſions to be obtained only by the help of reaſoning. And, as the indications of cure to fulfil which any claſs of medicines can be employed, are very generally deducible from the more permanent changes induced in the ſyſtem, the principles upon which they are founded will be leſs disjoined.

It is not, however, to be imagined that, in

every caſe, a diſtinction can be accurately traced betwixt the two branches here mentioned; or that the preciſe limits of either can be aſcertained. The direct effects of medicines, and the changes they produce in the ſyſtem, are in a continued ſeries, one depending on another. What therefore, in one point of view, is to be conſidered as an effect, in another muſt be looked upon as a cauſe. Hence, in many caſes, it is impoſſible to ſay where the proper point of partition between theſe diviſions ſhould be fixed. But, while no inconvenience will reſult from referring thoſe that are doubtful, either to the one head or the other, manifeſt advantages may be obtained from ſeparating thoſe which evidently belong to different ſubdiviſions. The inveſtigation of the primary or direct effects

of a claſs, therefore, muſt be allowed to merit a ſeparate conſideration.

In conſidering the direct effects produced by claſſes of medicines, ſeveral circumſtances are to be had in view. It is firſt neceſſary that they ſhould be enumerated. The primary effects which are produced by any claſs of medicines can be derived only from one of two ſources, either from the accounts given of the operation of the claſs, or from attentive obſervations. Having from theſe ſources aſcribed any particular effect to a claſs of medicines, it next becomes neceſſary to offer a proof that it actually is produced. This will, in general, be no difficult matter. The feelings of the patient, or the teſtimony of attendants, will be ſufficient to prove the reality of by far the greateſt part of

the primary effects. Where this is not the caſe, it may be inferred from the ſame evidence, that they muſt of neceſſity take place.

The reality of the primary effects aſcribed to a claſs of medicines being eſtabliſhed, it naturally follows that the cauſes by which they are produced ſhould be pointed out. Theſe are to be ſought for in the qualities of the medicine employed, and in the laws regulating the animal ſyſtem. From theſe laws, in conſequence of a particular action upon the body, determined effects muſt follow. Hence, to aſcertain the cauſes from which the obvious effects aſcribed to a claſs of medicines are produced, the laws of the oeconomy, and the qualities of the ſubſtance employed, equally claim attention.

The laſt requiſite in treating of the direct effects produced by any claſs of medicines is, to determine the degree in which they take place. This is a field of great uncertainty. There is no fixed ſtandard by which the comparative degree of effects, as produced by different claſſes of medicines, can be aſcertained. Beſides this, the effects produced by the ſame medicines evidently do not take place on every occaſion in an equal degree. It is, however, a matter of conſequence that theſe varieties ſhould be known, as, upon this circumſtance, the ſafe and proper adminiſtration of medicines muſt in a great meaſure depend. Some opinion may in general be formed with regard to them from the obvious phaenomena attending the operation of a claſs, and the probable cauſes by which the effects themſelves are produced.

Several arguments were formerly employed in order to ſhew the propriety of conſidering the primary effects of medicines as a ſeparate and diſtinct head from the ſubſequent changes they produce in the ſyſtem. At the ſame time, theſe two heads are ſo intimately connected that they naturally run into each other, and are, for the moſt part, treated of conjunctly under the general title of Modus operandi. Even allowing, therefore, that, for the reaſons formerly given, a diſtinction is to be made between the two, yet, it naturally follows that, to the conſideration of the former of theſe, that of the latter muſt be immediately ſubjoined. When it is conſidered, that, from the changes induced in the ſyſtem by means of any claſs of medicines, the purpoſes to which it can be applied in the cure of diſeaſes are immediately deducible, this

muſt be allowed to be a branch of the ſubject claiming particular attention. In order to obtain a foundation for rational or dogmatical practice, it is neceſſary that the changes ariſing from each claſs of medicines ſhould be fully enumerated.

Againſt a full and particular enumeration of theſe changes ſome objections may indeed be adduced. It may be alledged, that the enumeration itſelf is not to be obtained without difficulty, and that the number of changes which, on this footing, neceſſarily fall to be mentioned, will frequently give riſe to conſiderable perplexity. Beſides this, many of them will be, in their nature, ſo ſlight, that from thence no indications can be deduced.

On ſome occaſions all theſe objections

will, indeed, to a certain degree, hold good. But the inconveniences arising from thence are very inconsiderable, and by no means sufficient to out-weigh the advantages which may be obtained from a full enumeration. Improvements in any subject are not to be expected without difficulty. This first objection, therefore, may, with equal propriety, be urged against every means of improving any science. The perplexity occurring from the number of changes, although it may sometimes happen, will be a very rare occurrence. Changes are seldom so numerous as to afford any foundation for this; and, even when they are so, the inconvenience which might be supposed to arise from thence may, in a great measure, be obviated by proper arrangement. Hence it appears that the two first objections may be easily obviated.

A third objection was derived from the inutility of ſuch an enumeration. It is indeed probable, that there are changes in the ſyſtem induced by every claſs of medicines which are no proper foundation for its employment, with a view of fulfilling any indication. But, at the ſame time, they frequently co-operate in the production of effects, to which, when taken ſingly, they are inadequate. Without an acquaintance with theſe, therefore, the principles upon which particular indications are anſwered by means of the claſs cannot be pointed out. Changes indeed might be mentioned which cannot reaſonably be ſuppoſed to act even as aſſiſtant cauſes in fulfilling any indication for which the claſs may be employed. But from them cautions may often be ſuggeſted, which are neceſſary to be obſerved in the employment of the claſs.

Nay, in certain morbid conditions, in conſequence of ſuch changes, the claſs may be altogether inadmiſſible. In either of theſe views then, it appears that the full enumeration here propoſed is by no means unneceſſary.

The neceſſary inquiries with regard to each change may be conducted under the ſame ſubdiviſions that were formerly propoſed for the conſideration of the direct effects.

When any affection of the ſyſtem is mentioned as a change reſulting from a particular claſs of medicines, it is firſt neceſſary to prove that, in conſequence of the uſe of the claſs, it actually does take place. Here, in general, the proof is by no means ſo eaſy a matter as in the caſe of the

direct effects. The changes themſelves, for the moſt part, are neither obvious to by-ſtanders, nor felt by the patient. While this is the caſe, the marks which may be ſuppoſed to indicate their exiſtence are frequently of ſuch a nature that they may ariſe from different affections of the ſyſtem. For theſe reaſons, a proof amounting to demonſtration, is in many caſes not to be obtained. But it often happens, even in the moſt doubtful caſes, that there is a concurrence of circumſtances from which the reality of a particular change may reaſonably be inferred. If theſe circumſtances have been preceeded by a cauſe ſufficient to produce ſuch a change, and are followed by conſequences which may eaſily be deduced from it, the proof, although not abſolutely certain, will at leaſt arrive at a high degree of probability. Hence, altho'

certain evidence cannot in every caſe be obtained to prove the reality of particular changes ſaid to ariſe from the direct effects of medicines; yet, where the preſumption is founded on probable reaſoning, deduced from the circumſtances above mentioned, their exiſtence may readily be admitted.

Having determined the reality of every change, as far as the nature of the ſubject will allow, the next requiſite is to aſcertain the cauſe from which it ariſes. This is to be deduced from the direct effects before aſcribed to the claſs. Here, therefore, it is neceſſary to enquire in what manner it ariſes from theſe. By this enquiry, a more perfect knowledge of the change itſelf, and a farther proof of its reality, will often be obtained.

Theſe ſteps will in moſt caſes be ſufficient for aſcertaining the preciſe nature of each change. But, that a more perfect judgement may be formed of the extent to which it can with confidence be applied in reaſoning, as the foundation of indications, it is neceſſary that the degree in which it occurs ſhould likewiſe be known. An attempt, therefore, to determine this, becomes the laſt ſubject of inquiry.

From the ſubdiviſions already propoſed, it may be imagined, that every thing to be conſidered under the general head of the nature of the claſs will be ſufficiently explained. By a proper definition, the particular articles which ſhould be comprehended under the claſs will be aſcertained. By conſidering the direct effects reſulting from the claſs, and the changes of the ſyſ-

tem conſequent upon theſe, its mode of action will be explained, and a foundation afforded, from whence may be deduced thoſe indications which it is capable of fulfilling. But, even ſuppoſing a claſs of medicines to be as natural as can well be expected, yet remarkable differences will often occur among the individuals comprehended under it, eſpecially if they amount to a conſiderable number. This muſt infallibly happen, unleſs ſo many ſeparate aſſociations were adopted as entirely to fruſtrate the intention of their formation. From theſe circumſtances, however, it will follow, that what can be alledged concerning the claſs in general, will by no means be a perfect account of every individual. The moſt ready means of obviating this inconvenience, before having recourſe to the tedious method of ſtudying

the hiſtory of every individual, will be, by dividing the claſs into inferior aſſociations, or what may be termed orders.

The ſubdiviſions of claſſes, as well as the claſſes themſelves, are to be formed from a correſpondence of properties among the individuals referred to them. It is not neceſſary that the properties diſtinguiſhing particular orders ſhould be ſuch as have any tendency to produce the general purpoſes of the claſs to which they belong. On the contrary, a ground for diſtinctions into orders will moſt readily be obtained from properties altogether unconnected with thoſe by which they produce the effects aſcribed to the claſs to which they are referred. Where particular articles occur, therefore, which may be referred to more than one claſs, the beſt founda-

tion for a diviſion into orders will be afforded. Where this is not the caſe, ſome leading peculiarity muſt be the ground for diſtinction. From theſe circumſtances, the particular orders falling under a claſs are to be determined, in caſes where a ſubdiviſion is neceſſary.

That the ſubdiviſion thus inſtituted may anſwer the purpoſes intended by it, an account of the particular properties of each order is indiſpenſably neceſſary. A correſpondence among the different individuals referred to the ſame order, and the peculiarities which will beſt diſtinguiſh them from others, are not in every caſe to be diſcovered from the ſame circumſtances: But thoſe from which they are chiefly to be deduced, are, the kingdoms from which the articles comprehended under the or-

der are taken, the menſtrua by which they are acted upon, the form and doſe in which they are moſt commonly exhibited, the treatment neceſſary under them, and the peculiarities of their operation.

It would be in a great meaſure ſuperfluous labour to give a complete catalogue of all the individuals comprehended under each order. Beſides, this may be conſidered as more properly falling under the Materia Medica than under the Methodus Medendi. At the ſame time, as a proof of the propriety of inſtituting any diviſion which may be propoſed, and as a foundation for determining the juſtice of the character which may be aſſigned to any order, it will be neceſſary to give a few examples of the individuals meant

to be comprehended under it. By the conſideration of this fourth head, which is intended to ſupply defects in the preceeding ones, the nature of each claſs may be fully inveſtigated.

CHAP. V.

Concerning the Inveſtigation of the Uſe of Claſſes.

AFTER the nature of any claſs of medicines has been inveſtigated in the manner propoſed in the preceeding chapter, it next follows that ſome application to practice ſhould be made of the information from thence obtained. This naturally ſuggeſts a ſecond general head of enquiry, which may be treated of under the title of the Uſe of the claſs. The term Uſe, as here employed, is not to be taken in a limited ſenſe, nor confined merely to what may be ſaid with regard to the employment of the claſs in particular diſeaſed ſtates. It is here

to be underſtood as comprehending the whole general rules reſpecting its application, and even the conſideration of the morbid conditions under which its employment is inadmiſſible. Under this general head then, many particulars will fall to be conſidered, and theſe too of great conſequence. A proper plan, therefore, will here be particularly neceſſary for the attainment of thoſe advantages which may be ſuppoſed to reſult from the enquiry.

The firſt ſubdiviſion which would naturally occur under the general head now pointed out, is an inveſtigation of the effects of the claſs in the cure of diſeaſes. This will comprehend two parts, an account of the curative indications which may be deduced from the nature of the claſs, and

obſervations on its uſe in particular diſeaſes. It next, then, becomes neceſſary to point out, how each of theſe may with greateſt advantage be conſidered; and, firſt, with regard to the indications.

The term Indication is uſed, if not by accurate medical authors, at leaſt in common medical converſations, in a very vague and unlimited ſenſe. Before pointing out any plan for their inveſtigation, it will therefore be neceſſary to ſay in what particular ſenſe the term is here adopted. The medical writers who have treated of terms with the greateſt accuracy have, on this ſubject, employed three, the *indicans*, *indicatio*, and *indicatum*. That the term *indicatio* may be better underſtood, it will be neceſſary to explain it as connected with the other two. By the *indicans* is meant

a morbid ſtate exiſting in the ſyſtem which points out the neceſſity of a change. By the *indicatio* is underſtood the change which muſt be produced in the ſyſtem for the removal of any morbid affection. By the *indicatum* is ſignified the means by which this change may be obtained.

From the definitions now given, the relation in which Therapeutics ſtand to the practice of phyſic ſtrictly ſo called, is very obvious. In the laſt of theſe, we proceed from diſeaſes to indications, and from indications to remedies. In the former, the order is reverſed. In both, however, if followed out upon rational principles, indications are the intermediate link betwixt diſeaſes and remedies. This branch of the ſubject then, may be conſidered as one method of ſtudying the cure of diſeaſes.

From the account here given of the term indication it is evident, that a variety of particular intentions in the cure of diſeaſes, which are by many termed indications, will be entirely excluded from that denomination. Of this kind, are the removal of a preſent paroxyſm, the prevention of its return, the alleviation of ſymptoms, and the like. Theſe indeed may with great propriety be pointed out as branches of a general plan of cure. But, ſince they do not deſcend ſo low as to any particular morbid affection, they muſt be conſidered as being more general than even the indicantia themſelves. Hence, to ſtile them Indications is an evident abuſe of terms.

The term Indication, when adopted in its proper ſenſe, muſt always pre-ſuppoſe the exiſtence, and even the knowledge of a

particular morbid affection in the ſyſtem. When, therefore, an inveſtigation is propoſed of the indications of cure which may be deduced from the nature of any claſs of medicines, the firſt thing required is an enumeration of all the changes which it is capable of producing in morbid affections, provided theſe changes have any tendency either to alleviate or remove ſuch affections.

In delivering the plan for the inveſtigation of the nature of claſſes, ſome obſervations were made with regard to the ſources from whence indications are to be derived. It was alledged, that the only proper foundation from which the application of remedies for the removal of a diſeaſed ſtate can be deduced, is a juſt view of the effects which they are capable of producing

when the body is in a ſound ſtate. The changes which medicines can produce in morbid affections, are the neceſſary conſequences of thoſe which they are capable of producing in the ſyſtem in general. From theſe laſt then muſt be derived the indications of cure, to anſwer which any claſs of medicines can be employed.

From adopting theſe as the ſources of indication, a difficulty ſeemingly great may indeed be ſtarted. The morbid affections to which the human ſyſtem is liable are, in their nature, extremely various, and are diverſified by cauſes almoſt innumerable. While this is the caſe, every change ariſing in the ſyſtem from any claſs of medicines may be ſuppoſed capable of producing many alterations in morbid affections. Hence it might be concluded, that the indi-

cations deducible from the nature of every claſs of medicines would be very numerous: And that, from ſuch a multiplicity of indications, great confuſion would ariſe.

This would in fact be the caſe, could the different effects reſulting from any claſs of medicines be produced either ſingly or combined, at pleaſure. But a production or combination of effects in this manner is not to be obtained. There are few claſſes of medicines in which ſome effects are not deſtroyed, or at leaſt more than counterbalanced, by others immediately ſucceeding. The changes, then, which occur in a ſlight degree only, may, in point of indication, be entirely over-looked; eſpecially, if other changes, of themſelves more conſiderable, and which have a different ten-

dency, likewiſe follow from the employment of the remedy. Hence, in attempting to inveſtigate the indications which a claſs of medicines may be ſuppoſed capable of fulfilling, every change which it produces in the ſyſtem, taken by itſelf, cannot be looked upon as a proper ſource from whence they may be deduced. From the more remarkable or leading changes ariſing from a claſs of medicines, or from the united effects of ſeveral changes, indications can alone, with propriety, be derived. As a foundation, then, for the indications deducible from any claſs of medicines, it is neceſſary that the changes which it produces in the ſyſtem ſhould in ſome meaſure be generalized.

A complete enumeration of the indications which may be anſwered by any claſs

of medicines, is a very material ſtep towards the proper application of it to uſe. It is, however, by no means the only thing which, with this view, claims attention. A circumſtance, if not of equal weight, at leaſt well meriting conſideration, is an illuſtration of the morbid affection upon which each indication is founded.

There are perhaps few morbid ſtates which may not ariſe from different cauſes. It may indeed be ſaid, that, when a particular affection is produced, let its cauſe be what it will, its nature will ſtill be the ſame. But, notwithſtanding this, when the cauſes from which a diſeaſed ſtate has ariſen are different, its removal may with more eaſe and greater certainty be brought about in one way than in another. To ac-

count for this is no difficult matter. The cauſes frequently ſubſiſt in the ſyſtem, and, by that means, render the continuance of the affection which they produce more obſtinate than would otherwiſe be the caſe. A remedy, therefore, which in certain conditions may with propriety and advantage be employed for the removal of a particular morbid ſtate, can by no means be conſidered as univerſally fitted for that purpoſe. Although, therefore, from conſidering the nature of any claſs of medicines, it may reaſonably be concluded that, from its uſe, a particular morbid ſtate preſent in the ſyſtem will be removed, yet, it is not from thence to be imagined that it can be indiſcriminately uſed for that purpoſe. The propriety of employing it is ſtill to be determined from a proper view only of the particular variety of the morbid

affection then ſubſiſting. An illuſtration, therefore, of the morbid ſtate upon which each indication is founded, will readily be allowed to be a matter of great importance.

In conſidering indications, after the varieties in the morbid conditions on which they depend are explained, another particular naturally ſuggeſts itſelf, That a more diſtinct idea may be formed of the uſe of any claſs, the manner in which it acts in fulfilling the indications deduced from its nature becomes a neceſſary ſubject of enquiry.

This inveſtigation may indeed be conſidered as already in a great meaſure ſuperſeded. After the nature of a claſs of medicines has been fully illuſtrated, its mode

of action, as fulfilling the indications deduced from thence, cannot be very obſcure. But it has already been alledged, that the only proper general ſources of indication are the combined effects of ſeveral changes. It is evident, therefore, that, from the nature of a claſs of medicines, no juſt idea can be obtained of the manner in which any indication is fulfilled, without conſidering the particular ſhare which is to be attributed to each of the cauſes from which it is to be accounted for.

Beſides this, although an indication be referred to a particular ſource, and is from thence chiefly to be accounted for; yet it may likewiſe in ſome degree be aſcribed to other changes reſulting from the claſs. Hence theſe are not to be entirely overlooked. This, however, would be the caſe,

were the conſideration now propoſed to be totally neglected.

A third argument for this enquiry may be drawn from the tendency which claſſes of medicines, from ſome particular properties, have to counteract intentions for which they are employed. An indication may often with propriety and advantage be anſwered by the uſe of a remedy producing ſome changes which have a tendency oppoſite to the intention propoſed. To underſtand its action properly then, it is requiſite that theſe changes ſhould be likewiſe taken into account. They will, however, be conſidered with greateſt advantage when the means by which the indication is to be anſwered are inquired into. For theſe reaſons then, an enquiry into the mode in which a claſs of medicines ope-

rates, as fulfilling particular indications, cannot be conſidered as ſuperfluous. It will even be a neceſſary addition to the illuſtration of the morbid ſtate on which the indication depends.

It is needleſs to obſerve, that all the indications which may be pointed out as ſteps towards the cure of diſeaſes are by no means to be conſidered as equally important. Some occur in a variety of caſes, and are of ſuch a nature that the employment of medicines to fulfil them is every day requiſite. Others, on the contrary, are founded on morbid affections which very rarely happen. A few may even be mentioned, upon the ſuppoſition of diſeaſed ſtates, which, although conceivable and poſſible, have never in fact been obſerved. But, if this be the caſe, a preciſe know-

ledge of the extent to which any indication may be applied in practice is to be looked upon as no uſeleſs ſubject of enquiry.

Notwithſtanding the ſeeming utility of this inquiry, before laying it down as a ſubject of inveſtigation, it may be neceſſary to conſider how far the end propoſed is attainable. It can by no means be conſidered as a matter altogether impoſſible, to inveſtigate the various diſeaſes, and circumſtances in diſeaſes, in which it may be proper to fulfil any particular indication. But every one who is acquainted with the hiſtory of diſeaſes knows that the number to which the human body is liable is very great, and that the varieties produced in them by differences in age, ſex, temperament, climate, and many other circumſtances, are almoſt innumerable. It muſt therefore appear

obvious that, to execute this with any tolerable accuracy, would be a work of much greater labour and attention than the result of the enquiry could be ſuppoſed to merit. An attempt, therefore, to proſecute this inveſtigation in its full extent, would be not more difficult than ill judged.

From what has been ſaid, it will appear improper to aim at a complete view of all the morbid affections to which every indication may apply. But the application of indications to particular diſeaſes is not on that account to be totally neglected. The importance of any indication, and the attention due to it, may in ſome degree be judged of, even from a partial view of this ſubject. Such a partial view may at the ſame time be eaſily be obtained. The laſt ſtep then in treating of each indication will

naturally be, to point out ſome diſeaſes in which the claſs of medicines from which it is deduced, may be employed with a view of fulfilling it.

From the various heads under which it has been propoſed indications ſhould be conſidered, a proper idea of every one, deducible from the nature of any claſs may be obtained. In this manner the application of the claſs to uſe may be learned, as far at leaſt as a knowledge of that ſubject can be derived from theoretical reaſoning. The information thus acquired concerning the effects of medicines in the cure of diſeaſes can neither be repreſented as inconſiderable nor unimportant. But, in medicine, the data from which theoretical reaſoning is to be deduced, are by no means in every

caſe abſolutely certain. In our enquries, therefore, concerning a ſubject ſo uſeful, even the higheſt probabilities ſhould not be implicitly relied upon. Hence, in conſidering the effects of any claſs of medicines in the cure of diſeaſes, after attempting to illuſtrate and explain the different indications which may be deduced from its nature, another head of enquiry is naturally ſuggeſted. With a view to aſcertain the truth of what may be aſſerted with regard to the indications, it will be neceſſary to add ſome obſervations on the uſe of the claſs in paricular diſeaſes.

By ſuch practical obſervations, the truth of indications deduced from the nature of any claſs will be put to another teſt, beſides that of mere theoretical reaſoning. From this teſt it will appear, that theoretical rea-

ſoning, even when it ſeems beſt eſtabliſhed, is frequently contradicted by facts. Hence, it] will be a proper check upon thoſe errors to which theory is expoſed, from particulars in the oeconomy being either unknown or overlooked. From this teſt alſo, the truth of indications inferred from reaſoning ſeemingly doubtful will be often uncontrovertibly confirmed. In either way, therefore, it will ſerve as a criterion for determining the truth of indications deduced from the nature of the claſs.

But, practical obſervations, as recorded by candid and judicious obſervers, are not merely uſeful with this intention; while, on the one hand, they ſerve to crop the luxuriances reſulting from theory, they will on the other ſupply its deficiences. It has already been obſerved that indications de-

duced from the nature of claſſes will often point out practices which are at leaſt uncommon. Although, however, they may be readily inferred from theoretical reaſoning, they will frequently want confirmation in practice. On the contrary, it will appear that ſome claſſes of medicines are in daily uſe for particular purpoſes which cannot be referred to any indication deducible from their nature. It becomes therefore requiſite to point out ſome method for inveſtigating thoſe uſes of any claſs of medicines which a theoretical view of its nature does not ſuggeſt. They will moſt readily be learned from conſidering the ſucceſs with which the employment of any claſs of medicines has been attended in practice. Hence they will naturally be diſcovered from the enquiry now propoſed.

A ſtill farther advantage may be derived from this inveſtigation. Remedies are often preſcribed by valuable practical authors, where no theory is given either to point out the intention with which they are ordered, or to explain the principles upon which they operate. Where this is the caſe, however, the remedy can by no means be employed in ſimilar circumſtances with the ſame freedom or ſafety, as if theſe particulars had been known. That proper advantages, therefore, may be obtained from ſuch obſervations, it is neceſſary that theſe deficiences ſhould be ſupplied. From the enquiry now propoſed an opportunity will be afforded for inveſtigating the principles upon which the benefit obtained from any claſs of medicine is to be accounted for. Hence it will in ſome degree at leaſt ſupply theſe deficiences.

From what has been ſaid, it appears, that many advantages will accrue from obſervations concerning the employment of a claſs of medicines in particular diſeaſes. They will be a neceſſary ſubject of conſideration for determining the propriety of indications deduced from the nature of any claſs; for ſupplying indications not ſuggeſted by that view of the ſubject, but which it may with advantage be employed to fulfil; and for inveſtigating the principles upon which it operates, where facts concerning its ſucceſs are eſtabliſhed.

It is not propoſed, that, under this head, practical obſervations ſhould be offered concerning the uſe of any claſs of medicines in every diſeaſe in which it has been employed. This would be a field not leſs extenſive, a ſubject not leſs difficult in execution, and a piece of

knowledge, when obtained, not leſs inadequate to the labour of enquiry, than an attempt to aſcertain all the diſeaſes under which any particular indication falls to be fulfilled. The reaſons, therefore, which were urged againſt conſidering the one on an extenſive plan, will apply equally to the other. In this caſe, therefore, as well as the former, a partial conſideration only is meant to be propoſed. All the advantages which can be derived from this enquiry may be obtained from conſidering the uſe of each claſs, under a few of thoſe diſeaſes in which it is moſt commonly employed. The diſeaſes ſelected for this purpoſe are to be conſidered ſeparately, and in any order which the frequent employment of the claſs with a view to remedy them, or the importance of the effects obtained from it, may ſuggeſt.

An inveſtigation of the effects of any claſs of medicines in the cure of diſeaſes, in the manner which has here been propoſed, may ſeem ſufficient to point out the caſes to which it can be applied in practice. But it muſt be remembered, that aſſociations, even the moſt natural, admit of very conſiderable varieties. On this account, it becomes neceſſary that thoſe claſſes in which the properties of individuals are much varied, ſhould be divided into different orders. Where ſuch a diviſion is made, another ſubject of enquiry is naturally pointed out, previous to the uſe of the claſs. After having eſtabliſhed the propriety of employing any claſs for the removal of a morbid affection, it next becomes neceſſary to conſider what particular order of that claſs is to be uſed in preference to others.

The various circumſtances reſpecting the choice of orders may be referred to different ſources. Of theſe, however, the principal ſeems to be the nature of that change which is required in the ſyſtem for the reſtoration of a ſound ſtate. As the different orders into which any claſs of medicines is divided, vary in their effects; ſo it is but reaſonable to imagine that, from this diverſity, ſome orders will be more eſpecially fitted to produce particular changes than others. From conſidering, therefore, the properties of particular orders, and the different indications for which the claſs in general may be employed, a judgement may be formed with regard to thoſe purpoſes for which each order is moſt particularly adapted.

Another ſource from which circumſtan-

ces reſpecting the choice of orders may be deduced, is the degree of change neceſſary. The higheſt degree of change which can be produced is indeed in many caſes requiſite for fulfilling indications. This, however, by no means univerſally holds. Nor is a change in the ſyſtem, to a degree as high as particular indications may ſeem to require in every caſe, either adviſeable or proper.

A particular change induced in the ſyſtem, when it takes place only in a certain degree, may be the moſt ready and effectual means for removing a morbid affection. But, when it takes place in a higher degree, ſo far will it be from being attended with its former effects, that, if it produce any change, its tendency will be ſtill farther to rivet and increaſe the diſeaſe. The influence, therefore, which, from this

circumſtance, the degree of change will have in determining the choice of orders, is very evident.

But, beſides this, attention to the degree of change is likewiſe neceſſary, even in thoſe caſes where the higheſt change which can be produced from a claſs, is not more than ſufficient for fulfilling the indications intended to be anſwered. It is by no means proper to attempt fulfilling every indication in the moſt ready or expeditious manner in which it can be done. A change, which, in one caſe, may with ſafety and eaſe be immediately brought about, in another, is only to be wiſhed for by ſlow and imperceptible degrees. But, where a change in this manner is requiſite, it may much more readily be obtained from the uſe of one order than of another. Among

the circumſtances, therefore, which determine the choice of orders, regard muſt always be paid to the degree of change which any order is capable of producing.

The nature of thoſe changes which any order of medicines referred to a particular claſs is capable of producing, and the degree in which theſe changes ariſe from its employment, will, in moſt caſes, afford ſufficient data for determining the choice of orders. But, the manner in which it will be moſt expedient to anſwer any particular indication, is by no means in every caſe the ſame. From diverſity in habit, it is neceſſary that it ſhould be varied, not only in different patients, but even in the ſame patient at different periods. From this, therefore, ariſes another ſource from which circumſtances reſpecting the choice of or-

ders may be deduced. Hence, to the circumſtances derived from the two heads already mentioned, it is likewiſe neceſſary to add thoſe ſuggeſted by the condition of the patient.

Beſides the circumſtances referred to thoſe ſources, it is not to be denied, that a variety of others will likewiſe in ſome degree influence the choice of orders. Of theſe, however, many occur only in particular caſes, and thoſe which are deducible from the heads already mentioned muſt at leaſt be eſteemed the circumſtances of greateſt weight. Perhaps, in a general view of what reſpects every claſs, theſe only can, with propriety, be conſidered. Hence, to them, the inveſtigation here propoſed is meant to be entirely confined.

The ſuperior advantages which may be obtained from the uſe of one order in preference to another being thus determined, the choice of particulars will become much more limited and eaſy. Having determined upon the uſe of any order, it might ſeem natural to ſubjoin the conſideration of thoſe circumſtances which will principally regulate the choice of individuals. But the data upon which this choice can proceed are alone to be diſcovered from the hiſtory of the individuals themſelves. They cannot therefore be inveſtigated from any thing which will be advanced concerning the nature of claſſes and orders.

But this is not the only impropriety which would follow from immediately proceeding to treat of the circumſtances reſpecting the choice of particular articles.

That order appears ſtill farther to be faulty on another account. Attention to the plan hitherto propoſed would naturally point out another ſubject of enquiry as proper to be ſubjoined to that laſt mentioned.

The foundation for a diviſion of the different articles of the Methodus Medendi into ſeparate claſſes is a ſimilarity in the effects of the individuals referred to theſe claſſes. The chief advantage to be obtained from this diviſion, is the abridgement of an enquiry which would otherwiſe be tedious and crouded with repetitions. For the ſucceſsful adminiſtration of every mode of cure, many cautions muſt neceſſarily be obſerved. Some of theſe may no doubt be conſidered as peculiar to particular articles. But, from the ſame reaſon that aſſociations were formed, it

was propoſed that the curative indications pointed out ſhould reſpect, not individuals, but claſſes. In like manner, the cautions which are neceſſary to be obſerved with regard to every individual taken ſeparately, may be more compendiouſly delivered by treating of thoſe which apply to the whole claſs. Having, therefore, conſidered the general effects of any claſs of medicines in the cure of diſeaſes, and pointed out theſe circumſtances determining the preference due to the particular orders into which it is divided, it naturally follows that the next ſubject of enquiry ſhould be an inveſtigation of thoſe cautions which are neceſſary to be obſerved for its ſucceſsful adminiſtration.

The multiplicity of circumſtances by which the action of medicines may be af-

fected, gives rise to so great variety in the cautions necessary to be observed, as cannot easily be comprehended under a few general heads. A full detail, therefore, of every circumstance which may claim attention in the employment of particular articles referred to any class, is by no means to be attempted. Many of these circumstances, although requisite and proper on particular occasions, could not with propriety be included under the general consideration of a class. Others are not even to be learned from the history of particular articles themselves, but must be rested wholly upon the judgment of the practitioner. But, notwithstanding this, the observations and facts of former practitioners will, in this case, as well as in others, in a great measure facilitate enquiry, and con-

firm the ſuggeſtions of prudence. And the many particulars enumerated on this ſubject will be viewed to greateſt advantage when reduced to a few general heads. It follows then that theſe heads ſhould be pointed out.

The circumſtances principally claiming attention, in the employment of any claſs of medicines, are thoſe ſuggeſted by the nature of the claſs itſelf. The accidents to be guarded againſt from this ſource are, in a great meaſure, inſeparably connected with the employment of the remedy. The obſervations, therefore, to be made reſpecting theſe will apply moſt generally in every caſe. Hence, they will naturally fall to be firſt conſidered.

The action of every medicine will undergo conſiderable varieties from peculiarities

in the habit in which it is employed. From this, the cautions to be obſerved in its employment muſt likewiſe be varied. The condition of the patient, therefore, may be deſervedly eſteemed another ſource of cautions, and affords a foundation for more numerous obſervations than the general head laſt mentioned. Under this head muſt be comprehended all thoſe circumſtances which are ſuggeſted, either by the nature of the diſeaſe in which the claſs is employed; by the age, ſex, and temperament of the patient; or by peculiarities in conſtitution, independent of the particulars already mentioned.

To the head of cautions may alſo be reduced thoſe general rules of treatment which are to be obſerved during the uſe of any claſs. The neceſſary regimen, then,

may be ſubjoined to the two already mentioned, as a third branch of this head. To this muſt be referred the directions which are requiſite during the employment of any claſs, with regard to diet, temperature, exerciſe, and ſuch like circumſtances.

As far as the cautions to be obſerved with regard to claſſes of medicines in general are deducible from the ſources already mentioned, they may with propriety and advantage be conſidered in a ſyſtem of Therapeutics. By a proſecution of the ſubject to this extent, we may obtain uſeful information, without being perplexed with intricacies. Many cautions, indeed, which are requiſite in practice, thoſe eſpecially reſpecting particular articles, will not fall under any of theſe heads. But, as they

could not be introduced without embarraſſing the enquiry, they are purpoſely omitted. The cautions, therefore, to be pointed out under each claſs muſt be eſteemed thoſe circumſtances only which principally claim attention.

Under the general head of the uſe of a claſs of medicines, three ſubdiviſions have already been pointed out as ſubjects of enquiry. Theſe are the effects of the claſs in the cure of diſeaſes; the circumſtances reſpecting the choice of orders; and the cautions to be obſerved in its uſe. The inveſtigation of theſe particulars, when conducted in the manner here pointed out, will fully comprehend every thing neceſſary to be learned with regard to thoſe caſes in which any claſs of medicines is to be employed. But, beſides the morbid affections under which

the uſe of any claſs of medicines is indicated, there are others in which the effects which would reſult from its employment, are by no means to be over-looked. Under this general head, the conſideration of theſe muſt likewiſe be comprehended.

Some claſſes of medicines are indicated in a few morbid affections only. Others can be employed with advantage in a great diverſity of caſes. But no claſs can be conſidered as univerſally applicable. It is not to be queſtioned, that there are many morbid conditions depending upon cauſes which any change reſulting from a particular claſs will have no tendency to remove. All theſe, however, are by no means to be viewed in the ſame light. In many of them, the uſe of the claſs may be eſteemed in a

great meaſure indifferent, in others, it may be ſaid to be contra-indicated.

There is probably no morbid affection during the continuance of which, it is a matter of mere indifference whether a particular claſs of medicines be uſed or not. In every caſe where medicines are not actually indicated, their uſe is undoubtedly to be avoided. Where the only intention of preſcription is to ſatisfy a patient, it is eaſy to order ſomething, which, although it may be found in liſt of the Materia Medica, does not deſerve to be eſteemed a medicine. When, therefore, the uſe of a claſs of medicines is ſaid to be indifferent in any morbid affection, nothing farther is meant, than that it has no tendency from its nature to increaſe a diſeaſe already preſent; while, at the

ſame time, no benefit can be expected from its employment.

In another ſet of affections, the employment of a claſs will be followed by very different conſequences. In theſe, while it does not produce any change for the better, it will have an obvious tendency to augment and confirm the diſeaſe. When a claſs of medicines has, from its nature, this tendency in any morbid affection, it may there be ſaid to be contra-indicated. It is not, however, to be imagined that, where this is the caſe, its uſe is always to be forbidden. Particular circumſtances will often occur where, in a diſeaſed ſtate, the bad tendency of a medicine in one way is more than counter-balanced by the benefit to be derived from it in another. Diſeaſes, or ſtates in diſeaſes, then, in which a claſs of medicines

is ſaid to be contra-indicated, are not meant to be totally confined to thoſe morbid affections in which its uſe is altogether inadmiſſible. But under this term are to be comprehended, all thoſe morbid affections which the claſs, from its nature, has a tendency to augment.

From what has been ſaid, it appears that the morbid affections in which the uſe of a claſs of medicines is admiſſible from particular circumſtances only, may be divided into two kinds. From the definitions given, the diſtinction between thoſe morbid affections during which the uſe of a claſs may be eſteemed indifferent, and thoſe by which it may properly be ſaid to be contra-indicated, will be manifeſt. Caſes may indeed occur where the uſe of a

claſs will, from circumſtances, be proper in either of them. But, where theſe do not take place, an attentive practitioner will eſteem it equally neceſſary to avoid its uſe in both. The danger, however, to be apprehended from its employment in the one, is much greater than in the other. Hence, advantage may be derived from ſeparating thoſe which fall under each. But, the one ſet being pointed out, the other will of courſe be known. And, as the greateſt delicacy is neceſſary in the employment of a claſs in morbid affections where it has a pernicious tendency, it will be ſufficient to enumerate theſe. In treating, then, of the different ſubjects comprehended under the general title of the uſe of a claſs of medicines, after the conſideration of the ſubdiviſions already pointed out, the laſt ſubject of inveſtigation to be

propoſed, is an enquiry into the morbid conditions contra-indicating its uſe.

After what has been already ſaid with regard to the method of conducting an inquiry concerning indications, it will be neceſſary to add but little concerning contra-indications. The latter, as well as the former, are to be deduced from the nature of the claſs. They muſt not be founded upon ſingle or inconſiderable changes which it may be capable of producing, but upon its leading and united effects. After any morbid condition is from thence pointed out, as contra-indicating the uſe of a claſs, it will next be requiſite to explain the principles upon which it is pernicious in ſuch a ſtate. Laſtly, with a view to confirm or correct theoretical reaſoning, it will be neceſſary

in this caſe alſo to have recourſe to practical facts and obſervations. With this head of enquiry, conducted in the manner propoſed, the inveſtigation of the uſe of each claſs may be concluded.

CHAP. VI.

Concerning the Inveſtigation of the Hiſtory of particular Articles of the METHODUS MEDENDI.

FROM a proper execution of the plan which has been propoſed, it might be imagined, that a full view of the general doctrines of cure could be obtained. But, for this purpoſe, it is requiſite that all the articles referred to the Methodus Medendi ſhould be diſtributed into a determined number of aſſociations; and, where any conſiderable diverſity of effects occurs among the individuals belonging to a claſs, that it ſhould be ſubdivided into natural orders. Could this be done, a proper

conſideration of the nature and uſe of each claſs would ſuperſede the neceſſity of deſcending, in any inſtance, to the hiſtory of individuals. By proſecuting the enquiries pointed out under theſe general heads, the manner in which every particular article of the Methodus Medendi acts in the cure of diſeaſes, and the purpoſes to which it can be applied, would be clearly underſtood. But, if a diſtribution of the different articles cannot be obtained with the conditions here propoſed, a defect muſt neceſſarily ariſe.

When, in place of artificial aſſociations, natural ones are aimed at, it is ſcarce to be imagined that there will not occur articles of the Methodus Medendi, which, from the peculiarity of their operation, muſt ſtand ſingle. But, if this be the caſe, even in

any one inſtance, the account of general aſſociations only, muſt at leaſt be in ſome degree defective, when uſed for the explanation of the particular articles employed in the cure of diſeaſes.

Articles, on the other hand, will often, with propriety, be referred to a particular claſs, from their poſſeſſing all its characterizing properties, and from being in their nature ſuch, that they can be employed to anſwer the general purpoſes for which it is indicated. But, while this is the caſe, they may, at the ſame time, poſſeſs properties not to be found in any other individual referred to the claſs. Hence, the account to be given of their nature and uſe, as far as it can with propriety fall under the inveſtigation of the claſs in general, would be both lame and imperfect. In

this reſpect, therefore, theſe articles are in ſome degree in the ſame ſituation as if they had fallen under no aſſociation.

Beſides theſe, there is another imperfection under which this method of conſidering the ſubject will ſometimes labour. A proper illuſtration of the doctrines applicable to claſſes of medicines, will often be a ſufficiently full and complete account of all that is neceſſary to be known with regard to the different individuals comprehended under them. But, even while this is the caſe, it will ſometimes happen that the application of theſe general doctrines to particular articles, is neither obvious nor free from doubt.

From what has been ſaid then, it appears, that many inquiries which are inſe-

parably connected with Therapeutics, can only be profecuted from introducing the hiſtory of individuals. By this means an opportunity will be afforded for treating of individuals comprehended under no proper aſſociation. By this means, many particulars concerning ſome individuals, which could not be mentioned when treating of the general claſſes to which they belong, may with propriety be enumerated and explained. Laſtly, by this means, general principles will be illuſtrated from being exemplified in particular caſes. Hence, to the two general heads already mentioned, it will be neceſſary to ſubjoin, as a third, the conſideration of individuals.

It muſt indeed be allowed, that the in-

troduction of the hiſtory of particular articles into a ſyſtem of Therapeutics, is not unexceptionable. The conſideration of individuals belongs entirely to the Materia Medica. A diſtinction was formerly pointed out between that branch of medicine and Therapeutics. It was alledged that, altho' the two be much connected, yet, in reality there is an obvious foundation for a diviſion. Many advantages will undoubtedly ariſe from conſidering every branch of medicine as a diſtinct ſubject of enquiry. Hence a ſeparate conſideration is to be aimed at in this caſe, as well as in others.

It will, however, be allowed, that in every caſe, a full conſideration of the ſubject of enquiry is to be eſteemed the firſt and grand object. However deſirable, there-

fore, a ſeparate conſideration of every branch of medicine may be, it is ſtill to be viewed as a ſecondary object only. Hence, altho' the inconvenience which muſt ariſe from blending together ſubjects which are ſeparate and diſtinct, is as much as poſſible to be avoided; yet, where this intermixture is neceſſary for the attainment of a full inveſtigation, it muſt be ſubmitted to as one of thoſe inconveniencies to which, from the ſtrict connection and mutual dependence of different branches of ſcience, we are inevitably ſubjected. To anſwer the objection before ſtated, it is then only neceſſary to obſerve, that, without introducing the hiſtory of particular articles, Therapeutics cannot be completely conſidered.

After what has already been ſaid, it would be ſuperfluous to mention, that, in order

to obtain a complete account of the Methodus Medendi, the hiſtory of every particular article is by no means neceſſary. In the view which is here propoſed to be taken of Therapeutics, the conſideration of individuals is only to be introduced where their hiſtory is particularly requiſite for one or other of the purpoſes already mentioned. After theſe obſervations on the circumſtances in which the hiſtory of any particular article is to be introduced, it next becomes neceſſary to point out the plan on which this hiſtory may be conducted with the greateſt advantage.

The obſervations to be offered concerning any particular ſubſtance employed for the purpoſes of medicine, may be divided into two heads, the firſt treating of its na-

tural, the ſecond of its medical hiſtory. Could our knowledge of the natural hiſtory of ſubſtances be rightly applied to the diſcovery of medical properties, it would in all probability be of the higheſt utility. It is, however, to be lamented, that, in the preſent ſtate of that ſubject, the concluſions which can be deduced from it are by no means ſo certain, that any reliance can be put upon them. A minute enquiry into this ſubject then, as being tedious and not immediately applicable to uſe, would be both unneceſſary and improper.

But, although a minute enquiry into the natural hiſtory of any particular ſubſtance be not neceſſary for the inveſtigation of its medical properties, yet this ſubject is by no means to be entirely overlook'd. From

theoretical concluſions, the properties which a medicine poſſeſſes may almoſt, in every caſe, be in ſome degree determined. But the data from whence theſe concluſions can be drawn fall under the natural hiſtory of the ſubſtance. This ſubject, then, deſerves to be proſecuted, at leaſt, in as far as it is ſubſervient to the end now mentioned. With this view, under the title of the natural hiſtory of any ſubſtance, it will be neceſſary to inquire into its ſenſible qualities, its chemical analyſis, and, where it can be diſcovered, the natural order to which it belongs; theſe being the chief, if not the only particulars from which uſeful theoretical concluſions, with regard to medical properties, can be deduced.

The ſecond general head propoſed to be conſidered, in treating of any ſubſtance,

was, its medical hiſtory. This is a ſubject both more material and more extenſive than the enquiry laſt mentioned. It is not, therefore, to be paſſed over in the ſame ſhort and ſuperficial manner.

In treating of the medical hiſtory of every ſubſtance, the firſt thing naturally claiming attention is, an enquiry concerning the various purpoſes to which it has been applied from its firſt introduction into medicine. By this means, the moſt complete view will be obtained of all the properties which it can be ſuppoſed to poſſeſs. The firſt ſtep then to be proſecuted in the medical hiſtory of any ſubſtance is, what may be termed an account of its former uſe in medicine.

There are, however, few ſubſtances

which, after being long employed in medicine, have not undergone very conſiderable changes in point of reputation. It is at leaſt to be imagined, that time and experience will have had ſome influence, both in detecting former errors, and in confirming and inveſtigating real properties. To the account, therefore, of the former uſe of any ſubſtance, it will be neceſſary to ſubjoin, as a ſecond head, its preſent, and, as far as it can be detected, its real character, in the moſt ſimple ſtate in which it is exhibited.

It is well known, that the properties of ſubſtances are greatly altered from preparation; but the hiſtory of any individual cannot be complete till theſe varieties have been determined. In treating of any article then it will be neceſſary to ſubjoin a

third head to the two already mentioned, containing an account of the different modes in which it may be exhibited, and of the changes arising from thence. Under this head will fall to be considered, the different forms in which a medicine may be employed, the doses in which it may be given, and the treatment best fitted to favour its operation. Under these three heads, every thing necessary to be known with regard to the medical history of any article may be distinctly delivered.

When it becomes necessary to introduce the history of any particular article, from treating it in the manner which has here been proposed, the deficiencies which would arise from limiting enquiries to the nature and use of classes only, may, in a great

meaſure, be ſupplied. By this means, the ſtudy of a branch of medicine, of great importance in the practice of the art, may be conducted with advantage, and the general doctrines of cure fully inveſtigated.

CHAP. VII.

Concerning the Pharmaceutical Treatment of Medicines.

FROM the enquiries already propoſed, the purpoſes to which different medicines can be applied in the cure of diſeaſes may readily be inveſtigated. By this means, we may become acquainted with the neceſſary data for the employment of ſimple medicines, when they can be uſed in the ſtate in which they are naturally found.

The uſe of ſimple medicines, which may reaſonably be ſuppoſed to have conſtituted the moſt ancient practice, is perhaps not

the leaſt efficacious. But from the records of medicine it appears, that, from this practice, Phyſicians, by degrees, deviated very widely. Of late, indeed, they have made conſiderable returns to that ſimplicity from whence they ſet out. There is no queſtion that, in the deviations from ſimple practice, the mark was greatly overſhot; yet there is as little reaſon to doubt, that the intentions from which theſe deviations proceeded were both rational and proper.

Many of thoſe materials which are employed for the cure of diſeaſes are, in their natural ſtate, in a rude condition, and by no means readily applicable for the purpoſes of medicine. Some of them, from their ſenſible qualities, are ſo nauſeous as to be highly diſguſting to the palate. In

others the active principles are so much diffused in different matters, that the good effects which they are capable of producing cannot be obtained, without the employment of very large quantities. Besides, it often happens, that useful medicines possess, in their natural state, qualities which are deleterious to he human frame, and which must be corrected before they can with safety be employed: By the application of art, then, it is intended that medicines should be rendered more agreeable, more convenient, more safe, and more efficacious than they are in their natural state. To obtain these ends is the intention of pharmacy.

By Pharmacy is to be understood that branch of the medical art which treats of the preparation and composition of medi-

cines. It is then perfectly distinct from Therapeutics. To enter into any full detail even of the general heads of enquiry on this subject, would here be improper. But, at the same time, it is well known that the virtues of medicines are greatly affected by preparation. Hence, the general rules respecting the pharmaceutical treatment of substances employed for the purposes of medicine must be intimately connected with the general doctrines of cure. This subject, then, becomes a necessary supplement to the Methodus Medendi, as well as the last which was mentioned. A view, therefore, of the general heads of enquiry may likewise be expected.

From the definition which was formerly given of pharmacy, it is evident that this subject may properly be divided into two dis-

tinct parts. The firſt of theſe will treat of the preparation of medicines. Under this will fall to be mentioned all thoſe rules, by the proper obſervance of which medicines may be exhibited in the moſt commodious and efficacious form of which their nature will admit. The ſecond will treat of the compoſition of medicines. Under this muſt be comprehended the directions neceſſary to be obſerved, when different articles are to be combined together with a view of acquiring properties which they did not poſſeſs when taken ſingly. Preparation and compoſition then muſt neceſſarily be marked out as the moſt general heads of enquiry.

Many ſubſtances employed in medicine can be collected only at particular ſeaſons. Some of theſe, if left in the ſtate in which

they are found, would in a ſhort time either change their nature, or be entirely deſtroyed. Others are not only in this ſituation, but muſt be brought from diſtant countries, and undergo various changes of temperature. By this means, they are ſtill farther expoſed, either to have their qualities altered, or to be totally deſtroyed. Hence, an eſſential part of preparation conſiſts in the means of preſervation.

With a view to determine the means by which the preſervation of ſubſtances may be effected, it is firſt neceſſary to inveſtigate the cauſes which induce either deſtruction or a change of qualities. The alterations produced in ſubſtances which we would wiſh to prevent moſt frequently depend upon the nature and proportion of ſome of their component parts. Thus, for

example, nothing is more common than to obſerve an inteſtine motion landing in putrefaction induced by a large proportion of aqueous particles entering the compoſition of any ſubſtance. One means, therefore, by which ſubſtances may be preſerved is, by diminiſhing the quantity of theſe parts when in a high proportion.

This, indeed, cannot in every caſe be effected, without in ſome degree imparing the virtues of the ſubſtance. But, on the other hand, it will often be the moſt effectual means of heightening and concentrating virtues. Hence, in conſidering the means of preſerving ſubſtances, the firſt ſubject of enquiry will naturally be concerning the methods of removing thoſe parts which have a tendency to produce a change in their nature.

Fermentation and putrefaction, inducing an alteration or deſtruction of the qualities of medicines, are often occaſioned by the action of external bodies. Water, externally applied, will frequently inſinuate itſelf into ſubſtances employed as medicines, and produce the ſame effects as their native juices. The acceſs of air is well known to be a circumſtance, in a great meaſure, eſſentially neceſſary, before putrefaction can take place. Heat, if not altogether requiſite to putrefaction, has, at leaſt, a remarkable tendency to promote it. Cold, altho' in its own nature a ſtrong antiſeptic, yet, when applied in an intenſe degree to many ſubſtances, deſtroys their texture, and entirely deprives them of their former qualities. Inſects of different kinds, by preying upon ſubſtances, frequently produce changes of a ſimilar nature. From all this

it appears, that the action of a variety of external matters is highly adverse to preservation.

All these, however, cannot in every case be totally excluded. In many, their total exclusion would be improper. It becomes then necessary to consider how far, and by what means their action may be most advantageously restrained. Under the head of preservation, therefore, a second subject of enquiry will be, concerning the means of preventing the influence of external accidents.

In some cases, the means of preservation, which fall under the two heads of enquiry already suggested, cannot be employed. In others, all the effects which they are capable of producing will be insufficient for

obtaining the end propoſed. Hence, it becomes neceſſary to have recourſe to means of preſervation of a different nature.

While ſome ſubſtances are naturally prone to putrefaction, others are known to poſſeſs remarkable powers in reſiſting it. In conſequence of this, they are employed for preſerving ſubſtances, as well for the purpoſes of medicine as of diet. With this intention, ſalts, ſugar, ſpirits, vinegar, and many other antiſeptics are in daily uſe. From a variety of circumſtances, the propriety of employing any one of theſe, the proper choice of the individual to be employed, and the method of employing it, muſt be determined. Hence, to the two ſubjects of inveſtigation which have already been pointed out under the general title of Preſervation, an enquiry con-

cerning the addition of antiſeptics may be added as a third. Under theſe three heads the general rules reſpecting preſervation, and the means by which it can beſt be obtained, may be fully inveſtigated.

Some ſubſtances can be employed for the purpoſes of medicine in the ſtate in which they are preſented to us by nature. But, conſidering the great number of medicines which are in uſe, this may be ſaid to be the caſe with a few only. By much the greateſt part of them muſt undergo ſome preparation at leaſt, before they can be conveniently exhibited in the cure of diſeaſes. Hence, under the general head of preparation, a ſecond ſubject of inveſtigation naturally ſuggeſted, is an enquiry with regard to the different forms in which medi-

cines may be moſt advantageouſly employed.

The different forms in which medicines are exhibited are very numerous. This, therefore, muſt of courſe be a moſt extenſive ſubject of enquiry: Hence proper ſubdiviſions are here particularly neceſſary, abridging an inveſtigation which would otherwiſe be very tedious. With this view, the different forms of medicines, according as they are intended for internal or for external uſe, will afford a foundation for ſeparate ſubjects of enquiry.

Many of the forms of medicines which are taken internally are introduced into the ſtomach in a ſolid ſtate. Of the various preparations which may be referred to this diviſion, the forms of powders and

pills may be eſteemed the two extremes. The former is the looſeſt texture in which any ſubſtance is taken into the ſtomach, and the latter the moſt firm. For the proper preparation of powders, the principal requiſite ſeems to be a minute diviſion of parts. For that of pills, ſuch a conſiſtence as, while it gives a proper coheſion, is not incapable of ſolution in the alimentary canal. But many particulars, which are neceſſary to be attended to in preparation, are in common to both theſe forms. Beſides this, from the rules and directions applicable to the extremes, many of thoſe circumſtances which deſerve attention in the employment of forms of an intermediate texture, may be readily underſtood. Hence, a proper knowledge of the rules which are applicable to thoſe ſolid forms in general, which are uſed internally, will ſuper-

ſede the neceſſity of many repetitions under particular forms. An enquiry, therefore, concerning the forms of medicines which are taken internally in a ſolid ſtate, may be marked out as one ſubject of inveſtigation.

From the ſubject of enquiry which has now been pointed out, another is naturally ſuggeſted. After conſidering the general directions reſpecting the forms of medicines which are to be employed internally in a ſolid ſtate, it next follows that thoſe ſhould be treated of which reſpect the forms uſed in a fluid ſtate.

The different modes of preparation which will fall under this head, are even more numerous than thoſe which can be referred to the laſt. They may be divided into

two kinds; either they are naturally fluid, or they acquire their fluidity by the application of art. Thoſe medicines which are naturally fluid, when they are to be exhibited in the ſame form, in general require no preparation at all. When they do require it, they ſtand in need of nothing farther than being freed from extraneous matters. This muſt be effected on different principles, according to the nature of the ſubſtances which it is neceſſary to ſeparate. Hence, although this be not a field for extenſive enquiry, yet it will at leaſt merit ſome attention.

Where fluidity is to be artificially acquired, it is chiefly, if not always, obtained in one of two ways; either by expreſſion, or by the addition of fluid matters. Theſe,

therefore, naturally ſuggeſt themſelves as ſeparate heads of enquiry.

That any medicine may be a fit ſubject for expreſſion, ſeveral circumſtances are requiſite. It is not only neceſſary that it contain a conſiderable proportion of fluid, but that this fluid be in ſuch a ſtate as to be capable of being detached from it without great difficulty. Beſides, that in this way an efficacious remedy may be obtained, it is neceſſary that the active powers of the medicine ſhould reſide in its fluid parts. Theſe conditions, however, are rarely united. Hence, this is a method of preparation applicable to few ſubſtances only. Where it can be applied, the chief thing requiſite is to prevent the admixture of foreign matters. The rules and obſervations, therefore, which are ne-

ceſſary with regard to it, need not to be numerous.

The variety of preparations which may be formed by the addition of fluid matters is very great. In different medicines there are many active matters capable of being diſſolved. Each of theſe active matters may be diſſolved by different menſtrua. Beſides this, the medicines formed by any menſtruum will be much diverſified by the method in which it has been applied. The active parts of medicines which are principally capable of being diſſolved are, ſaline, mucilaginous, oily, balſamic, and reſinous matters. The menſtrua which are chiefly employed are, water, ſpirit, wine, and vinegar. From theſe, by different methods of application, are formed infuſions, decoctions, tinctures, and many other forms of medicines. The

number of preparations, then, is a ſufficient ground for concluding that the directions falling under this head muſt be numerous.

The efficacy of all medicines obtained by the application of fluid matters, will greatly depend upon the menſtrua being properly adapted to the ingredients from which active powers are to be extracted. Thus, water is beſt fitted for diſſolving ſaline and mucilaginous matters. Spirit, on the other hand, is the proper menſtruum for oily, balſamic, and reſinous ſubſtances. Wine and vinegar in ſome degree combine the ſolvent powers of the two other menſtrua. They are often preferable to water, as covering taſte, heightening colour, and giving a ſtronger impregnation; and to ſpirit, as not being ſo highly ſtimulant. Hence, directions will likewiſe be ne-

ceſſary for determining the choice of the menſtruum, by means of which any of theſe fluid preparations are to be formed.

From what has been ſaid then, it appears, that, under the head now mentioned, many particulars muſt be comprehended. Hence, in treating of preparation, it muſt be looked upon as an eſſential ſubject of enquiry. With this head, the obſervations to be offered on the different forms of medicines which are intended for being uſed internally, may be concluded.

Having pointed out the enquiries neceſſary to be proſecuted in conſidering the different forms of medicines which are uſed internally, the only remaining branch of this ſubject reſpects the conſideration of thoſe intended for external uſe. The dif-

ferent forms of medicines which can be uſed in this way are indeed leſs numerous than thoſe which can be referred to the preceeding head. They muſt, however, be conſidered as admitting of conſiderable variety; and the rules applicable to the different forms intended for internal uſe will not apply to them. The footing, therefore, on which they require a ſeparate conſideration from the former head, is manifeſt. It muſt, however, be allowed, that many obſervations made with regard to the one will likewiſe hold good concerning the other. Hence, from a full inveſtigation of the former head, the enquiries on this ſubject will be much abridged.

To the head of preparations intended for external uſe, are to be referred fomentations, ointments, waſhes, plaſters, and ma-

ny others. It is evident, therefore, that the diviſion formerly pointed out is likewiſe naturally ſuggeſted on this ſubject. Hence, in treating of the medicines uſed externally, the forms in a ſolid or in a fluid ſtate will afford a foundation for ſeparate enquiries.

The preparation of medicines being thus conſidered, the only ſubject of enquiry now remaining reſpects their compoſition. This was formerly pointed out as one grand branch of the art of pharmacy. The advantages which are aimed at in compoſition are no leſs obvious than thoſe which may be derived from preparation. Medicines, by being united, often entirely change their nature, and acquire active powers which none of them before poſſeſſed. Many active ſubſtances, which are of ſuch a

nature that they could not, without imminent danger, be exhibited by themſelves, will, from a very ſlight addition, become ſafe and efficacious medicines. Where ſubſtances employed as medicines poſſeſs a very high degree of activity, they muſt often be uſed in doſes ſo very ſmall, that, if they were to be taken entirely by themſelves, they could neither be conveniently exhibited, nor accurately divided. But, from a variety of additions which will have no tendency, either to alter or impair their virtues, theſe inconveniences may with the greateſt facility be obviated. It is then ſufficiently evident, that, from combining together ſubſtances employed for medical purpoſes, advantages may both be expected and obtained.

But it is by no means to be imagined,

that compoſition will in every caſe be attended with good conſequences. From the ſame principles on which it is ſometimes of ſervice, it will in other caſes have a manifeſtly bad effect. That good effects may be obtained from medicines, it is on ſome occaſions neceſſary that they ſhould be employed in a very concentrated ſtate. In ſuch a ſituation, every addition will have a manifeſt tendency to weaken their power. Beſides this, even the moſt active medicines will often, by a very ſlight and trifling addition, be rendered totally inert. And farther, it is by no means uncommon to find two medicines which will readily unite together, and, when united, will form a very uſeful compoſition; but, upon the addition of a third, which would even have readily joined with either taken ſeparately, the former

union will not only be deſtroyed, but the purpoſes of compoſition entirely fruſtrated. It is not therefore to be imagined, that, in order to obtain a ſafe and efficacious medicine, nothing farther is requiſite than to jumble together a number of active ingredients. In order to obtain the advantages which may be derived from compoſition, without being expoſed to the inconveniences which it may occaſion, many circumſtances muſt be attended to. An inveſtigation of theſe, therefore, will readily be eſteemed a ſubject of great importance.

The opinions which mankind, at different times, and in different countries, have entertained with regard to compoſition, ſeem to have been very oppoſite. This will readily appear from conſulting either practical writers, or diſpenſatories publiſh-

ed by authority. From an acquaintance then with the rules of compoſition, we will be enabled to judge of the propriety of the various compoſitions adopted by different writers. But, beſides this, it is not to be doubted that many compoſitions hitherto unemployed may be introduced into practice with advantage. Hence a knowledge of this ſubject becomes farther neceſſary, that theſe may be judiciouſly and elegantly contrived. The rules to be obſerved in compoſition will entirely reſpect two particulars, the poſſibility of combination, and the advantages to be derived from it. Combination may often appear proper when, from the chemical qualities of the ſubſtances, it cannot be effected. It may often, on the other hand, be effected with the utmoſt facility, when it would be entirely uſeleſs. Hence, either in examining or

contriving any compoſition, both particulars claim attention.

The firſt of theſe is an enquiry entirely chemical. The poſſibility of combination, and the effects of mixture can be determined only from an acquaintance with the properties and affinities of bodies. By means of mechanical aſſiſtances, a momentary union may perhaps, in every caſe, be effected. But, in many caſes, particularly if the bodies thus united be in a fluid ſtate, it will be momentary only. The advantages of compoſition, however, cannot be expected without a union in ſome degree permanent. This is only to be obtained when the matters which are mixed together are capable of being united in a ſtate of proper ſolution. Hence the principles of chemiſtry are the ſources from whence

the rules of compoſition, in this particular, are to be entirely derived.

Being ſatisfied that ſubſtances are capable of union, it next becomes neceſſary to enquire what advantages are to be expected from it. The opinion which authors have entertained of this ſubject may readily be diſcovered from conſidering the different parts of which they have ſuppoſed every formula to conſiſt. Five different parts have in general been enumerated. Theſe have been termed, *baſis*, *adjuvans*, *corrigens*, *dirigens*, and *excipiens*. By the *baſis* of a compoſition is meant, that part by means of which the intention propoſed from the preſcription is principally to be anſwered. By the *adjuvans*, ſomething added to the baſis from which its operation may be rendered more ſtrong than would

otherwiſe be the caſe. By the *corrigens*, ſomething added with a view either to cover diſagreeable ſenſible qualities, or to correct noxious powers. By the *dirigens*, ſomething determining the operation of the other articles in a particular way. And, by the *excipiens*, ſomething intended to receive all the others, and to promote a proper union.

If theſe are to be conſidered as the proper conſtituent parts of a compoſition, the heads of enquiry on this ſubject are evident. But this matter may be viewed more ſimply. All compoſition ſeems to be intended with one of three views, either to co-operate, to correct, or to give a proper form. By conſidering, therefore, how far any addition will ſerve one or other of theſe purpoſes, the advantages to be derived

from combination may be determined, Upon the whole, by profecuting in a proper manner the different enquiries which have been pointed out, we can alone expect to attain to that elegance in prefcription which will unite agreeable fimplicity, with fafety, convenience, and efficacy.

An ABSTRACT of the PLAN propoſed to be followed in treating of the METHODUS MEDENDI.

That the plan which has now been delivered for conſidering the general doctrines of cure may be more diſtinctly underſtood, it will not be improper to review the various ſubjects of inquiry which have been propoſed. The particular heads will be ſtill more manifeſt, when they are ſeen detached from any reaſons intended to point out their neceſſity, or evince their propriety. For this purpoſe, after the account which has already been given, it will be ſufficient to ſubjoin an abſtract of the plan, without enlarging upon particulars.

I. CONCERNING THE NATURE OF THE CLASS.

1. *A Definition of the Claſs.*

a. The general and obvious properties poſſeſſed by all the individuals referred to the claſs.

b. Negative marks for the excluſion of ſubſtances poſſeſſing the leading properties of the claſs.

2. *The direct Effects of the Claſs.*

a. A proof of the reality of theſe effects.

b. An inveſtigation of their cauſes.

c. An attempt to aſcertain the degree in which they take place.

3. *The Changes induced in the Syſtem by the direct Effects of the Claſs.*

a. b. c. The ſame ſubdiviſions as under the preceeding head.

4. *The different Orders into which the Claſs may be divided.*

a. The diſtinguiſhing properties of each order.

b. Examples of particular articles which may be referred to it.

II. CONCERNING THE USE OF THE CLASS.

1. *The Effects of the Claſs in the Cure of Diſeaſes.*

a. The indications deducible from its nature.

a. An illuſtration of the morbid ſtate on which each indication is founded.

b. The manner in which the claſs operates in fulfilling the indication.

c. Examples of diſeaſes in which it may be uſed with a view of fulfilling it.

b. Practical remarks on the uſe of the claſs in particular diſeaſes.

2. *Circumſtances reſpecting the Choice of Orders.*

a. Circumſtances reſpecting the nature of the change which is required in the ſyſtem.

b. Circumſtances reſpecting the degree of change which is neceſſary.

c. Circumſtances reſpecting the condition of the patient with whom the remedy is to be employed.

3. *Cautions to be obſerved in the Uſe of the Claſs.*

a. Cautions deduced from the nature of the claſs itſelf.

b. Cautions deduced from the condition of the patient.

c. Cautions deduced from the regimen beſt adapted to the operation of the medicine.

4. *Morbid States contra-indicating the Employment of the Claſs.*

a. An illuſtration of the foundation of theſe morbid ſtates.

b. Practical obſervations for confirming the reality of the contra-indications.

III. CONCERNING THE HISTORY OF PARTICULAR ARTICLES OF THE METHODUS MEDENDI.

1. *The Natural History of an Individual.*

a. Its ſenſible qualities.

b. Its chemical analyſis.

c. The natural order to which it belongs.

2. *The Medical History of an Individual.*

a. An account of its former uſe in practice.

b. An account of the purpoſes for which it is at preſent employed.

c. An account of the different modes in which it may be exhibited.

a. Varieties with regard to the form in which it may be uſed.

b. Varieties with regard to the quantity which may be given.

c. Varieties with regard to regimen.

IV. Concerning the Pharmaceutical Treatment of Medicines.

1. *The Preparation of Medicines.*

A. For preſervation.

a. The means of removing component parts apt to change their nature.

b. The means of preventing the acceſs of external cauſes inducing a change of qualities.

c. The addition of antiſeptics.

B. For a convenient form.

A. Preparations intended for internal uſe.

a. In a ſolid ſtate.

b. In a fluid ſtate.

a. Matters naturally fluid.

b. Fluidity obtained by expreſſion.

c. Fluidity obtained by the addition of Menſtrua.

B. For external uſe.

a. } The ſame diviſion as under
b. } the preceeding head.

2. *The Compoſition of Medicines.*

A. The poſſibility of combination.

a. The means of obtaining a temporary union.

b. The means of obtaining a permanent union.

B. The advantages of combination.

a. For augmenting virtues.

b. For correcting active powers.

c. For giving a commodious form.

———If vain our toil,
We ought to blame the culture, not the soil.
POPE.